



Brandeis University

Waltham, Massachusetts





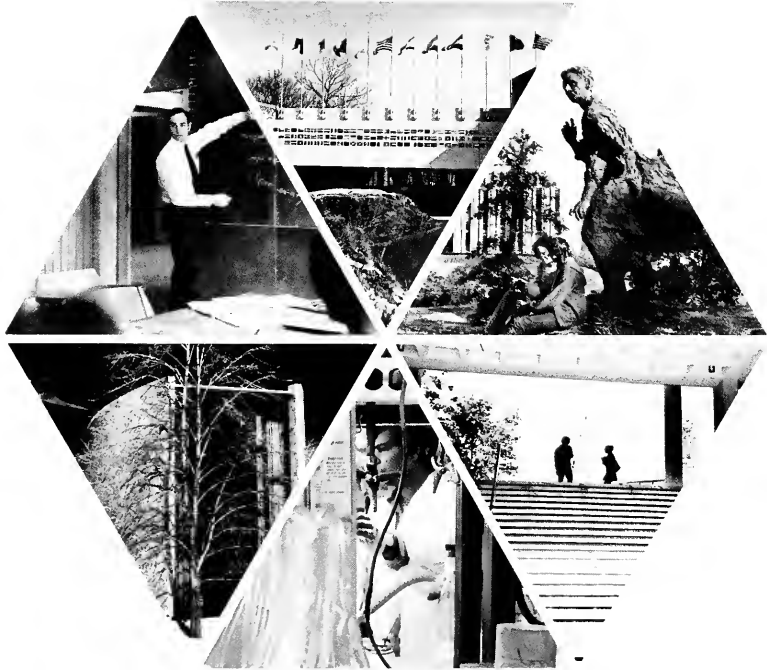
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# brandeis university bulletin



## graduate school of arts and sciences

1975-1976

august 27, 1975



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**Brandeis University**

**The  
Graduate School  
of Arts and  
Sciences  
1975-1976**

**WALTHAM, MASSACHUSETTS**

**VOL. XXVI, No. 2, August, 1975**

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*"It must always be rich in goals and ideals, seemingly attainable but beyond immediate reach . . .*

*"It must become truly a seat of learning where research is pursued, books written, and the creative instinct is aroused, encouraged, and developed in its faculty and students.*

*"It must ever be mindful that education is a precious treasure transmitted—a sacred trust to be held, used, and enjoyed, and if possible strengthened, then passed on to others upon the same trust."*

—from the writings of  
LOUIS DEMBITZ BRANDEIS (1856-1941)  
on the goals of a university.



*"Brandeis will be an institution of quality, where the integrity of learning, of research, of writing, of teaching, will not be compromised. An institution bearing the name of Justice Brandeis must be dedicated to conscientiousness in research and to honesty in the exploration of truth to its innermost parts.*

*"Brandeis University will be a school of the spirit—a school in which the temper and climate of the mind will take precedence over the acquisition of skills and the development of techniques.*

*"Brandeis will be a dwelling place of permanent values—those few unchanging values of beauty, of righteousness, of freedom, which man has ever sought to attain.*

*"Brandeis will offer its opportunities of learning to all. Neither student body nor faculty will ever be chosen on the basis of population proportions, whether ethnic or religious or economic."*

DR. ABRAM L. SACHAR, Brandeis' first president, at ceremonies  
inaugurating the University, October 8, 1948

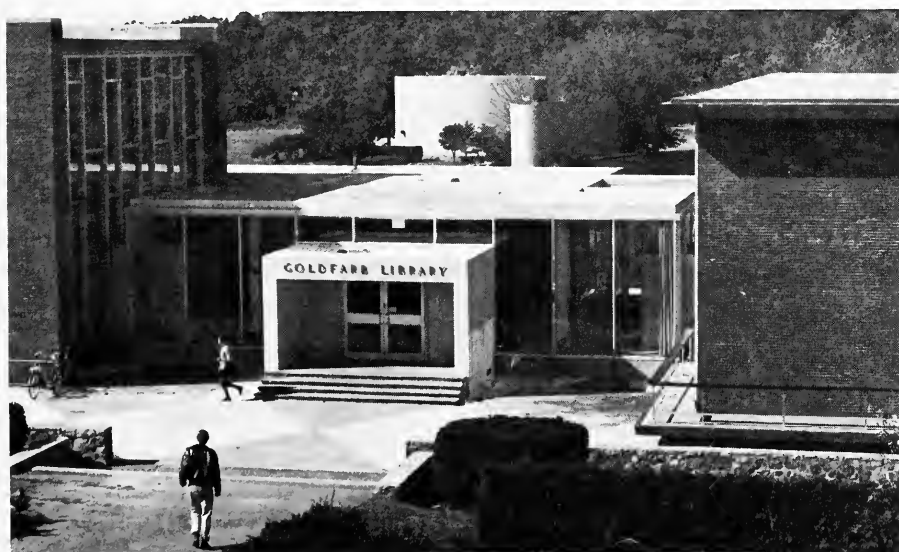
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# Academic Calendar 1975-1976

## Fall Term

Wednesday	September 3	Returning students register. Fees are payable in full at this time. Students who register later will be fined \$10.
Thursday	September 4	New students register. Fees are payable in full at this time. Students who register later will be fined \$10.
Monday	September 8	Opening day of instruction in courses. No section meetings in larger courses until announced.
Monday	September 15	No University Exercises.
Friday	September 19	Final date for filing Study Cards. No program changes for Fall Term may be made after this date.
Thursday Friday	November 27 and November 28	No University Exercises.
Monday	December 1	Last day for February degree candidates to submit final drafts of theses and dissertations to department chairmen, and to submit "Application for Degree" to Graduate School Office.
Monday Friday	December 15 through December 19	Mid-year Examinations. Winter Recess begins after last examination.
Friday	December 19	Final date for admission to candidacy for students expecting to earn the Ph.D. degree in May 1976. Final date for completion of language requirements for students expecting to earn the Ph.D. in May 1976.
Friday	January 2	Fall Term grades due and Incompletes from Spring Term 1975. Final date for faculty certification that February Master's candidates have completed degree requirements, including language(s) and theses, and that Ph.D. candidates have defended dissertations.
Monday	January 12	Final date for deposit of Ph.D. dissertations at the Graduate School Office by February degree candidates.

## Spring Term

Thursday	January 29	Registration procedure for Spring Term begins. Fees are payable at this time.
Wednesday	February 4	Opening day of instruction in all courses.
Friday	February 20	Final date for filing Study Cards. No program changes for Spring Term may be made after this date. Final date for filing "Application for Financial Aid" for 1976-77.
Monday	March 8	Last date for May degree candidates to submit final drafts of theses and dissertations to department chairmen and to file "Application for Degree" with Graduate School Office.
Monday	April 5	Final date for Master's candidates to complete foreign language requirement(s) for May degree. Final date for completion of language requirements for students expecting to earn the Ph.D. in February 1977.
Tuesday	April 13	Spring Recess begins after last class.
Monday	April 26	Classes resume. Final date for faculty certification that May Ph.D. candidates have defended dissertations. Final date for May degree candidates to discharge all financial indebtedness to the University.
Monday	May 10	Final date for deposit of Ph.D. dissertations at the Graduate School Office by May degree candidates. Final date for faculty certification that Master's candidates' theses have been accepted.
Monday Friday	May 17 through May 21	Final examinations.
Monday	May 24	Grades due for all degree candidates no later than 10 a.m.
Sunday	May 30	Commencement.



# University Organization

Brandeis is one of the few small research universities in the United States. Its academic programs are limited in size to encourage quality and integrity of intellectual achievement. There is continuing interaction between college, graduate programs, and institutes; and the interchange benefits all, creating an intellectual environment of vitality. Extensive research activity fertilizes the undergraduate roots of the institution no less than the graduate and professional programs.

## **The College of Arts and Sciences**

In keeping with its general objectives, Brandeis attaches prime importance to the liberal arts curriculum. It is designed to offer full academic opportunities for those students planning to pursue graduate or professional studies, as well as those whose educational objective is the baccalaureate degree.

Established in 1948, the College of Arts and Sciences offers instruction in the Schools of Creative Arts, Humanities, Social Science, and Science. Regularly matriculated students pursuing courses of instruction under the Faculty of Arts and Sciences may, upon satisfactory completion of the first year, continue as candidates for the Bachelor of Arts degree. Brandeis' College of Arts and Sciences received full accreditation from the New England Association of Colleges and Secondary Schools in 1953.

For full information, see the Bulletin of the College of Arts and Sciences.

## **The Graduate School of Arts and Sciences**

The Graduate School of Arts and Sciences is designed to educate broadly as it trains professionally. It offers courses of study leading to the master's and doctor's degrees. Graduate areas include Anthropology, Biochemistry, Biology, Biophysics, Chemistry, Comparative History, Contemporary Jewish Studies, English and American Literature, History of American Civilization, Literary Studies, Mathematics, Mediterranean Studies, Music, Near Eastern and Judaic Studies, Philosophy and History of Ideas, Physics, Politics, Psychology, Sociology, and Theater Arts.

## **The Florence Heller Graduate School for Advanced Studies in Social Welfare**

The Florence Heller Graduate School for Advanced Studies in Social Welfare is a professional school established by Brandeis University to provide an educational program directed toward leadership responsibility in the field of social welfare. The School was made possible by an initial endowment from the late Mrs. Florence G. Heller of Chicago. It was organized in 1959 following careful

study by the President, the Administration, and the Board of Trustees of Brandeis University after consultation with a distinguished panel of social work educators and social welfare authorities.

The School is housed in the Florence Heller Building complex which includes the Benjamin Brown Research Building. These buildings contain classrooms, faculty offices, student study rooms, and research facilities.

The School offers an educational program of study leading to the Ph.D. degree. Courses cover social policy analysis, applications of economic analysis to social policy issues, applied social research, and social planning. Specialized courses are offered in a number of fields including income maintenance and manpower development, health planning, gerontology, mental health and mental retardation, and alcoholism. Students are admitted either with or without a previous Master's level graduate degree. Minimum full-time residence requirements are one year for students entering with a prior graduate degree and two years for others. The normal expectation, however, is for at least one additional year of full-time residence beyond these minimum requirements.

In addition to its training program, the School conducts an active program of policy-oriented research related to its broad range of social welfare interests. Research projects are interdisciplinary in character and usually involve collaborative activity between faculty and advanced students.

Full information is available in the Bulletin of the Heller Graduate School.

## **Rosenstiel Basic Medical Sciences Research Center**

The Lewis S. Rosenstiel Basic Medical Sciences Research Center was made possible in 1968 through the gift of Brandeis Fellow Lewis S. Rosenstiel. The Center has established research programs in the basic medical sciences embracing work in biochemistry, biology, chemistry, microbiology, physics, and psychology. Staff members are jointly appointed to the Brandeis faculty basic science departments. The Center invites participation of distinguished scholars and medical scientists, offers hospitality to younger researchers at the fellowship level, sponsors symposia and colloquia, and underwrites scholarly publications.

The Basic Medical Sciences Research Center contains sophisticated scientific equipment and facilities. Through cooperative programming, both with departments at Brandeis and in the Boston area, the Center has broadened the scope of basic medical science research offerings at Brandeis. Grants from such agencies as the National Science Foundation, National Institutes of Health, and American Cancer Society, among others, support research programs in the Rosenstiel Center.

The Rosenstiel Center sponsors the annual presentation of the Lewis S. Rosenstiel Award, given to recognize distinguished work in basic medical

research. Created in 1971 to also honor Mr. Rosenstiel, the award consists of a handsome bronze medallion and a stipend of \$5,000.

## **Endowed Schools**

### *The Danielsen School of Philosophy, Ethics, and Religious Thought*

The Albert V. Danielsen School of Philosophy, Ethics, and Religious Thought was made possible through a gift from Mr. Danielsen, a Fellow of the University from Wellesley Hills, Mass.

The School includes the Department of Philosophy, which now combines undergraduate and graduate programs through the M.A. and Ph.D. degrees. The graduate program in philosophy is designed to prepare students for careers in the field as scholars and teachers, and it places traditional emphasis on logic, epistemology, metaphysics, value theory and the history of philosophy. Added to the two fully endowed chairs of philosophy in the School is the Albert V. Danielsen Chair in Christian Thought.

The Danielsen School thus hopes to encourage the advancement of philosophical thought in the context of contemporary issues, following the broadest scholarly and interdisciplinary approaches in an age of ecumenism and imperative social need.

### *Fierman School of Chemistry*

The Harold and Minnie Fierman School of Chemistry, created through a benefaction from Brandeis Trustee Harold Fierman, incorporates graduate and undergraduate programs, including research activities, lecture programs and colloquia. At the undergraduate level the curriculum is highly diversified, including basic courses in analytical, nuclear, organic and physical chemistry, as well as chemical kinetics and structure determination of crystals and molecules.

At the graduate level, M.A. and Ph.D. candidates pursue advanced studies and research projects in quantum chemistry, enzyme reactions, and synthetic and theoretical chemistry. Graduate students at Brandeis hold National Science Foundation Fellowships, National Institutes of Health Fellowships, and National Aeronautic and Space Administration Traineeships, among others.

The School has been aided, in part, by grants from the Atomic Energy Commission and the National Science Foundation.

### *The Fisher School of Physics*

The Martin Fisher School of Physics, established through a gift from Martin A. Fisher of New York City, a Fellow of the University, emphasizes both theoretical and experimental physics. Through scholarship and fellowship assistance

provided by Mr. Fisher, teaching and research at the undergraduate, graduate, and post-doctoral levels are enhanced, and a setting is provided for lectures, colloquia, and scholarly publications produced by the School.

The School's undergraduate program ranges from introductory courses in classical and modern physics, computer sciences, and astronomy, to atomic and nuclear physics, theoretical and continuum mechanics, quantum mechanics, high and low energy, nuclear, solid state, and mathematical physics. M.A. and Ph.D. programs include courses in research, courses in astrophysics, atomic and plasma physics, quantum theory of fields and solids, and general and special theories of relativity.

Grants from such agencies as the National Science Foundation, the Atomic Energy Commission, and the Bureau of Naval Research, among others, support research programs in the Fisher School.

### *The Kutz School of Biology*

The Milton and Hattie Kutz School of Biology was made possible through a gift from the estate of the late Hattie Kutz of Wilmington, Del. The School encompasses the University's undergraduate and graduate biology departments. The biology curricula present a comprehensive body of courses that advance from fundamental studies to more complex areas, and with special heed to new discoveries and the results of current experimentation.

Students are offered a balance between traditional background in biology and the thorough discussion of new knowledge. They are encouraged to engage in original research and independent study. The biology program also provides research and teaching opportunities for a large number of post-doctoral fellows.

A major portion of the governmental, industrial, and private research grants awarded to the University are devoted to varied projects in biology, including cancer research. Distinguished scientists appear frequently at colloquia and lectures to explain their investigations.

### *Lown School for Near Eastern and Judaic Studies*

Created through the generosity of Brandeis Trustee Emeritus Philip W. Lown of West Newton, Mass., the Lown School for Near Eastern and Judaic Studies encompasses an intensive teaching and research program in ancient and modern Jewish thought, history, culture, and issues, offered by both the undergraduate and graduate departments of Near Eastern and Judaic Studies. The University has assembled an array of distinguished scholars who offer an extremely broad complex of programs designed to prepare students for scholarly careers or for communal service.

The School includes the Center for Contemporary Jewish Studies, organized for the specific purpose of further research and seminars dealing with major contemporary issues.





The Lown School for Near Eastern and Judaic Studies cooperates closely with the American Jewish Historical Society, whose headquarters building on the Brandeis University campus was completed during 1968.

#### *The Poses School of Fine Arts*

The Poses School of Fine Arts, established through a gift from Brandeis Trustee and Mrs. Jack I. Poses of New York City, embodies the broad undergraduate curriculum in the fine arts. It also incorporates the Poses Institute of Fine Arts, which supplements course work and workshops in painting and sculpture. Plans for launching a graduate program are now under study.

The undergraduate program in fine arts provides a substantial area of studies in the form and meaning of art from the present day to antiquity. The program stresses individual creativity and the varied techniques of the artist.

The Poses Institute of Fine Arts is host to exhibitions of paintings, sculpture, artifacts, and other forms of contemporary and traditional art in the University's museum and many gallery halls.

Mr. and Mrs. Poses also underwrite the Jack and Lillian Poses Creative Arts Awards of Brandeis University, presented annually in the area of theater arts, music, literature, and fine arts.

#### *The Swig School of Political Science*

A generous benefaction from Brandeis Trustee Emeritus Benjamin H. Swig of San Francisco has established the Swig School of Political Science. The Swig School encompasses the University's Politics Department, including several endowed academic chairs established earlier through the efforts of Mr. Swig. Among these are: the President Harry S. Truman Chair in American Civilization; the Earl Warren Chair in American Constitutional Studies; the Christian A. Herter Chair in International Relations; and the Adlai E. Stevenson Chair in International Politics.

## Special Scholarships and Fellowships—1974-1975

### *Wien International Scholarship and Fellowship Program*

Created in 1958 by the Lawrence A. and Mae Wien Fund, the Wien International Scholarship Program offers scholarships and fellowships to undergraduate and graduate students from foreign countries. Awards made for a single academic year to students who are candidates for a degree at Brandeis may be renewed upon application to the Committee on the Admission of Wien Scholars. Undergraduate applicants may also be accepted as Special Students for a “year abroad” program of study. These students return to their home universities after their year at Brandeis has been completed.

All applicants for both the undergraduate and graduate grants must have a thorough knowledge of the English language inasmuch as all students study within the regularly organized curriculum. In addition, opportunities are provided for all Wien Scholars to attend special seminars, conferences and field trips which are planned to provide an understanding of many facets of American society.

### *The Abram L. Sachar International Fellowship Program*

The Abram L. Sachar International Fellowship Program was set up by the Trustees in tribute to the first President of the University. It enables selected Brandeis graduate and undergraduate students to study at outstanding foreign universities to supplement the training that they have had at Brandeis.

Eligibility requirements for these fellowships include a high level of scholastic achievement, intellectual competence or creative ability, and financial need.

To date under the Sachar Program students have gone to such universities as: Ife and Makerere in Africa; London and Sussex in England; L’Institut des Etudes Politiques in Paris; the College of Europe in Bruges, Belgium; The Hebrew University in Israel; and Bratislava University in Czechoslovakia.

### *Saval-Sachar Summer Research Scholarships*

The Saval-Sachar Scholarships are designed to aid Brandeis juniors in the conduct of research for senior honor theses. The scholarship program was made possible through a gift to Brandeis from Maurice H. Saval of Boston, and also honors Abram L. Sachar, Chancellor of the University. Students taking part in the Program will travel to many parts of the world each summer as part of their research activities.

### *Irving and Rose Crown Fellowships*

Underwritten by the Crown family of Chicago, the Irving and Rose Crown Fellowships subsidize graduate students in the field of American civilization with substantial grants to complete their studies and research. The Fellowships are designed to attract gifted and interested scholars who plan careers in teaching, research, government, diplomacy, and allied areas. Candidates are proposed annually by a faculty committee drawn from Brandeis and screened by distinguished authorities from other universities. Applicants need not be Brandeis students and should have reached a point where they are in the final stages of their work to attain their doctorate.

### *Goldwyn Life Sciences Fellowships*

Established by the Samuel Goldwyn Foundation of Los Angeles, the Samuel Goldwyn Life Sciences Fellowships provide support for graduate students studying the life sciences. Preference is given to foreign-born applicants who need financial aid and who seek to study in the United States. Five full renewable fellowships—covering tuition, health fee, research support, and a stipend—are provided annually.

### *Gordon Fellowships*

A subsidy from the James Gordon Grant for Government of Chicago has permitted the Department of Politics to develop a special doctoral dissertation program providing fellowships to selected qualified candidates for the Ph.D. degree in Politics. To be eligible, students must have completed their first year of graduate work, either at Brandeis or elsewhere. The fellowship awards are limited to individuals whose dissertations deal with approved topics within the fields of American urban and/or local political problems. Fellowships may be held for one or two years. The subsidy also provides research funds, summer stipends, and travel money for field work or investigation in connection with preparation of the dissertation.

### *Levitz Scholarship and Fellowship Fund*

Established in the name of Brandeis Fellow Ralph Levitz of Miami, Fla., the Levitz Fund provides scholarship and fellowship aid to worthy and deserving students at Brandeis University. The Fund was made possible through a generous grant from Mr. Levitz and contributions of friends and associates within the furniture industry.

### *Mary and Abbey Hirschfield Fellowships in the Humanities*

Created through a major bequest to Brandeis University from the estate of the late Mary Hirschfield of Chestnut Hill, Mass., the Mary and Abbey Hirschfield

Fellowships offer annual assistance to graduate students in the Humanities. Selection of students to receive the fellowships is made by a special committee of Brandeis University faculty, which determines choices on academic achievement and financial need. Students eligible for the generous fellowships are taken from the areas of Classics, English and American Literature, Romance and Comparative Literature, Germanic and Slavic Languages, Philosophy and History of Ideas, Mediterranean Studies, and Near Eastern and Judaic Studies. The Fellowships bear the name of Mrs. Hirschfield and her husband, Abbey, who died some 28 years ago.

*The Harry and Mildred Remis Fellowship and Scholarship Fund in the Creative Arts*

Established by Brandeis Trustee and Mrs. Harry Remis of Boston, Mass., this endowment offers assistance to students who have demonstrated promise and potential in the creative arts. Undergraduates that are selected for scholarships must demonstrate talent in music, fine arts, and/or theater arts, and require financial aid in order to complete their studies.

The Harry and Mildred Remis Graduate Fellowships in Music are offered to qualified graduate students seeking to pursue careers in musical theory and composition and in the history and literature of music. The Fellowships are normally given to candidates who have completed one year of graduate work, on the basis of demonstrated excellence in academic areas and general musicianship, on creative potential and promise, and on financial need.



### *Rogoff Foundation Trust*

The Rogoff Foundation Trust, a major gift established by the trustees of the Rogoff Foundation Inc., provides support for scholarships, fellowships, study or research in the pre-medical or medical sciences, or related life sciences.

### *Joseph and Bessie Gerber Glass Pre-Law Scholarships*

Granted through the generosity of Mrs. Joseph Glass of Mt. Kisco, N. Y., this gift offers tuition scholarships to worthy and deserving undergraduates who have chosen the study of law and the legal profession as their post-graduate goals and have selected their college courses accordingly.

### *Bernard and Miriam Kessner Fellowships Trust Fund in Biology and Chemistry*

The Kessner Fellowships have been underwritten by the gift of the late Dr. and Mrs. Bernard H. Kessner of Bay Harbor, Fla., to provide annual support to graduate students in the fields of biology and chemistry. These generous fellowships go to ten graduate students, selected each year from applications made throughout the United States. A Brandeis University faculty committee processes the applications, but final choices are made by a special jury of three outstanding academic figures in the fields of biology and chemistry. The Kessner Fellowships are designed to help students who are planning careers in research and university teaching to complete their doctoral training without the interruptions that so often accompany post-graduate work.

### *The Samuel Schulman Graduate Teaching Fellowships*

Underwritten by a gift from Samuel Schulman of Los Angeles, the Samuel Schulman Graduate Teaching Fellowships were established in 1974 to aid outstanding graduate students in any academic field. The program is designed to give valuable supervised classroom teaching experience to students while they pursue their studies. Six Schulman Fellowships are awarded each year.

### *Zale-Lipshy Endowed Scholarship and Fellowship Fund*

This major scholarship and fellowship fund was established in 1974 by the Zale Corporation of Dallas and its friends and associates throughout the country, in honor of three principals of the firm: Morris B. Zale, a Trustee Emeritus of Brandeis, William Zale, and Ben A. Lipshy, all of Dallas. The gift was given in part to recognize the 25th Anniversary of Brandeis and is designed to assist undergraduate and graduate students in all disciplines. Funds are awarded without discrimination and solely on the basis of merit and need.



# The Graduate School of Arts and Sciences

## General Information

### History and Organization

The Graduate School of Arts and Sciences was formally established in 1953 when the University's Board of Trustees authorized graduate study in the Departments of Chemistry, Music, Psychology, and Near Eastern and Judaic Studies. The first Master of Arts degree was conferred in 1954; the first Master of Fine Arts degree, in 1954; and the first Doctor of Philosophy degree in 1957.

The general direction of the Graduate School is vested in a Graduate Council of the Faculty composed of the President and the Dean of Faculty, ex officio; the Dean of the Graduate School; and one representative, usually the chairman, of each of the several University departments and committees offering graduate instruction. The members of the Graduate Council are appointed by the President on the recommendation of the Dean of the Graduate School. The functions of the Graduate Council, exercised in consonance with University policy, are to determine requirements for admission; to provide programs of study and examinations; to establish and maintain requirements for graduate degrees; to approve candidacy for degrees; to make recommendations for degrees; to make recommendations for new areas of graduate study; to lay down such regulations as may be considered necessary or expedient for governing the Graduate School; and to exercise a general supervision over its affairs. The Dean of the Graduate School is the chairman of the Graduate Council and the chief executive officer of the Graduate School.

### Objectives

The underlying ideal of the Graduate School is to assemble a community of scholars, scientists, and artists, in whose company the student-scholar can pursue study and research as an apprentice. This objective is to be attained by individualizing programs of study, restricting the number of students accepted, maintaining continual contact between students and faculty, and fostering the intellectual potential of each student.

Degrees will be granted on the evidence of intellectual growth and development, rather than solely on the basis of formal course credits. Fulfillment of the minimum requirements set forth below cannot, therefore, be regarded as the sole requisite for degrees.

## **Areas of Graduate Study**

During the academic year 1975-76, graduate programs will be offered in the following areas:

- |                                     |                                     |
|-------------------------------------|-------------------------------------|
| 1. Anthropology                     | 11. Mathematics                     |
| 2. Biochemistry                     | 12. Mediterranean Studies           |
| 3. Biology                          | 13. Music                           |
| 4. Biophysics                       | 14. Near Eastern and Judaic Studies |
| 5. Chemistry                        | 15. Philosophy and History of Ideas |
| 6. Comparative History              | 16. Physics                         |
| 7. Contemporary Jewish Studies      | 17. Politics                        |
| 8. English and American Literature  | 18. Psychology                      |
| 9. History of American Civilization | 19. Sociology                       |
| 10. Literary Studies                | 20. Theater Arts                    |

Details of the programs and courses offered in these areas are given below.

Graduate study in social welfare is offered by the Florence Heller Graduate School for Advanced Studies in Social Welfare. For further information see the Bulletin of the Heller School.

## **Graduate School Office**

The Graduate School office is located in the Rabb Graduate Center. The office is open Monday through Friday from 9 A.M. to 5 P.M. All requests for information, catalogs and application forms should be addressed to the Dean of the Graduate School of Arts and Sciences, Brandeis University, Waltham, Massachusetts 02154.

## **Dining Facilities**

Graduate students may sign meal contracts for varying numbers of meals or buy cash meal books. Arrangements for these contracts are made at the Food Director's Office in Kutz Dining Hall. A kosher kitchen is also maintained. Individual meals and light snacks may be purchased at Usdan Student Center.

## **Office of International Programs**

This office administers the Wien International Scholarship Program, the largest privately endowed foreign scholarship program in the United States, and serves as the counseling center for students who come here from Asia, Africa, Europe, and South America. It advises students of special social and educational activities and provides assistance in fulfilling the legal procedures required by the U.S. Immigration Service in obtaining working permits and documents necessary for extended periods of study, and in other technical matters which may arise. (See page 25.)



In addition, the office provides the Brandeis community with information on academic opportunities abroad such as Fulbright grants for graduate students and faculty, the Watson Fellowships and Rhodes Scholarships for seniors being graduated, the Abram L. Sachar International Fellowship Program (see page 14), and the Jacob Hiatt Institute for study in Israel. American students wishing to study abroad on university-accredited programs should consult this office.

## **University Health Services**

The University Health Services provides a program of comprehensive health care for students not only as it relates to physical illness, but also to personal and emotional concerns. Students are entitled to services available at the Stoneman Infirmary, the Golding Medical Outpatient Service Center and Mailman House. In addition, each student is encouraged to participate in the Brandeis University Student Health Insurance Plan or the Student Dependent Plan. Although participation in the Plan is not mandatory, it is required that a suitable alternative insurance plan be substituted. Except for limited day-care facilities, the Health Services and the use of the Infirmary are available to students only during the period in which the University is in regular academic session.

Prospective students planning to matriculate in the College and the Graduate Schools are responsible for the submission of a Health Examination Report completed by their family or personal physician. In addition to information about previous health and details of the physical examination, evidence of immunization against smallpox and tetanus is required. If possible, protection against poliomyelitis is desirable. Since students may not register until these requirements have been satisfied, it is strongly recommended that reports be submitted by July 1.

The Student Health Insurance Plans are designed to defray expenses of those care situations which are beyond the scope of the Health Services; for example, laboratory and x-ray examinations, as well as hospitalization for more serious illnesses or accidents. The Plan extends for a full calendar year commencing September 1. Brochures outlining the details of the plans, as well as the services by the University Health Services, are mailed to each student prior to registration. Students are urgently requested to read the relevant brochure and keep it for reference. Whereas situations not covered within the Health Services or by the insurance plans are infrequent, an awareness of these possibilities will tend to lessen misunderstanding and disappointment. In such instances, students will be responsible for expenses which are not covered by the University's health program or its associated insurance policy. Similarly, students will be responsible for expenses which are not covered by alternative insurance programs substituted for the Brandeis University Student Health Insurance Plan or Student Dependent Plan.

Within the limitations of the insurance program, fees of physicians who are not members of the Health Services staff, laboratories, and hospitals will be processed for payment only when consultations, laboratory or x-ray studies, or hospitalization have been authorized by the University Health Services in advance on a form provided for this purpose. The University is not responsible for off-campus medical and hospital care sought by students or their parents on their own initiative, or for outside care or consultation which has not been authorized previously by the Health Services. The only exception to this is in case of an emergency, or illness or injury occurring while away from the University, when such prior authorization is not feasible.

## **The Psychological Counseling Center**

The Psychological Counseling Center, a part of the University Health Services, is located in Mailman House. It provides professional assistance to students who have personal or emotional problems. Those who wish such help may refer themselves directly to the Center. Their communications with the staff are held in strict confidence.

## **Admission**

As a rule only well-qualified men and women who have completed the normal four-year program leading to the Bachelor's degree will be considered for admission to the Graduate School. Graduates of foreign schools and others who have completed the equivalent of a Bachelor's degree program may apply, describing the educational program they have completed.

## **Testing**

Applicants for admission to the graduate programs in biochemistry, politics, and psychology are required to take the Graduate Record Examination, including the aptitude test portion and preferably one advanced test in a field related to the proposed area of graduate study. Applicants for admission to the graduate program in psychology must also take the Miller Analogies Test. Applicants to the contemporary Jewish studies program must submit the results of either the Graduate Record Examination or the Miller Analogies Test. All other applicants are urged to take the Graduate Record Examination. In order for the results of the Graduate Record Examination to be considered, the applicant should take the examination no later than January preceding the academic year for which application is made. Information concerning the Graduate Record Examination is available from the Educational Testing Service, 200 Nassau Street, Princeton, N.J. 08540, or Box 1025, Berkeley, Calif. 94704.

Foreign students, regardless of field of graduate study, are required to take the Test of English as a Foreign Language (TOEFL) unless English is their first language. This includes comprehensive testing in auditory comprehension, reading comprehension, writing, vocabulary, and grammar. Applications for admission to the test should be made to TOEFL, Educational Testing Service, Princeton, N.J. 08540, U.S.A. The test is administered at various established centers abroad.

## **Application**

Specific requirements for each graduate program are to be found under the appropriate headings in this catalog. Each applicant should consult these requirements before filing an application. A student may apply to only one graduate department or program. Applicants to the Graduate School should write to the Dean of the Graduate School of Arts and Sciences, stating which program of study he or she wishes to enter. A catalog and appropriate forms will be forwarded to the applicant. The "Application for Admission" and, if needed, the "Application for Financial Aid" should be completed and returned in duplicate as soon as possible. Applicants requesting financial aid should file as early as possible.

Applications for admission for the Spring Term must be filed by December 1. Students are not usually admitted at midyear, and those who do gain admission are not normally eligible for financial aid.

All applicants must arrange to forward, in duplicate, official transcripts of all undergraduate and graduate work. In addition, they must have forwarded, on forms provided by the Graduate School, two letters of recommendation, preferably from professors with whom they have studied in their proposed area of study. Applicants who have engaged in graduate study elsewhere should request at least one of the recommendations from a professor with whom they have done graduate work.

Many departments also require the submission of samples of work as well as the materials described above. Applicants should consult departmental requirements in a later section of this catalog for enumeration of additional materials to be submitted.

All applications must be accompanied by an application fee of \$20, payable by check or money order to Brandeis University. No application will be processed until this fee is paid.

## **Admission Procedure**

All applicants are considered on a competitive basis. The number of students admitted each year in each department is limited so that the Graduate School may operate effectively under its distinctive principles of individualized study

and apprenticeship. Consequently, admission may sometimes be denied to qualified persons. Meeting the minimum standards of admission merely qualifies the applicant for a place in the group from which final selections will be made. Selections are based on the applicant's ability to do graduate work of high quality, as shown by: the distinction of his or her previous record, particularly in the proposed area of study; the confidential letters of recommendation submitted in support of the application; and his or her adaptability to the particular graduate programs offered by Brandeis University. In addition, knowledge of foreign languages, relevant practical experience in the field, samples of work, the results of the Graduate Record Examination, and indications of character are considered.

Each application for admission with all supporting records is first examined by the appropriate department or committee. The department or committee recommends to the Dean of the Graduate School which applicants should be selected for admission and for financial aid. The Dean reviews all applications in the light of departmental recommendations, and informs each applicant of the results in April.

## Acceptance

A student who has been accepted for admission to the Graduate School will be notified by a letter specifying the date by which he or she must accept the offer of admission and awards, if any. If a student selected for admission indicates that he or she does not intend to accept the offer or fails to reply by the date specified, the admission offer becomes void and another applicant may be accepted.

Brandeis University subscribes to the "Resolution Regarding Scholars, Fellows, Trainees and Graduate Assistants" of the Council of Graduate Schools in the United States. The resolution states:

"Acceptance of an offer of a graduate scholarship, fellowship, traineeship, or graduate assistantship for the next academic year by an actual or prospective student completes an agreement which both student and the graduate school expect to honor. In those instances in which the student indicates his acceptance prior to April 15 and subsequently desires to change his plans, he may submit in writing a resignation of his appointment at any time through April 15 in order to accept another scholarship, fellowship, traineeship, or graduate assistantship. However, an acceptance given or left in force after April 15 commits him not to accept another appointment without first obtaining formal release for the purpose."

Students who are accepted must provide the Graduate School Office with an official final transcript of their undergraduate record and of any graduate work in process at the time of acceptance. In addition, students who are

accepted are required to complete and return a medical questionnaire and a health insurance form, which will be sent with notification of acceptance. All acceptances are conditioned on subsequent approval by the University Health Office. All persons admitted to the Graduate School must give evidence of their physical and psychological capacity to carry on their studies.

If, after having been admitted, a student cannot attend, he or she should notify the Dean of the Graduate School as soon as possible. If such students are to be admitted for a subsequent academic year, they must request reactivation of their applications at the appropriate time, and bring them up to date.

Applicants who have been denied admission may reapply in a later year, particularly if they have had further training which would strengthen their applications or if they can submit additional letters of recommendation.

Admission to the Graduate School does not imply that the successful applicant has been accepted as a candidate for a graduate degree. Superior performance at Brandeis University is essential. Admission to candidacy for the M.A. or M.F.A. is granted by the graduate department or committee administering the program of study. Admission to candidacy for the Ph.D. is granted by the Graduate Council on the recommendation of the department or committee administering the program of study.

## **Readmission**

Admission is valid only for one academic year. A student's record is reviewed annually, and he or she may be denied readmission. Students completing the requirements for the M.A. or M.F.A., and students who already hold a Master's degree but who have not yet been admitted to candidacy for the doctorate, must make formal application for readmission by the first business day in March. The readmission application must be filed with the Graduate School Office.

## **Foreign Students**

Graduates of foreign colleges and universities who have the equivalent of an American Bachelor's degree, and foreign students who have been graduated from American universities may compete for admission and financial assistance.

In order to ascertain the eligibility of the candidate, Brandeis University requires that each applicant file a *Preliminary Request for Application* form obtained by writing to either the Graduate School of Arts and Sciences or the Office of International Programs any time before September 1 of the year pre-

ceding the anticipated admission date. This information will be evaluated and the application form itself will be sent to those who qualify.

Final applications must be completed and returned by March of the year in which the student seeks fall admission. Successful applicants will be notified as soon as possible.

*Entrance Examinations* All applicants whose major language is not English must take the Test of English as a Foreign Language (TOEFL); thorough competence in English is required for study at Brandeis. All applicants are urged to take the Graduate Record Examination (GRE). They should consult this catalog for the departments which may *require* this examination. For information concerning the administration of both these examinations, applicants should write to the Educational Testing Service, Princeton, N.J. 08540.

*Financial Aid.* Financial aid in the form of scholarships, fellowships, teaching assistantships and research assistantships is available to only a few of the most outstanding students. In any case, the total assistance offered usually covers only a small proportion of the student's total annual expense. Hence the student, when applying for admission, should indicate a means of financial support. At least \$3,000 in United States currency is necessary to cover living costs for the nine month academic year, exclusive of expenses for tuition, travel and summer or vacation periods.

A small number of Wien International Fellowships may be granted to outstanding doctoral candidates.

*Employment.* The regulations of the United States Immigration and Naturalization Service limit strictly the amount of paid work that a student from abroad may do. During the summer vacation, the Immigration Service may permit the student to obtain off-campus employment. Such permission cannot be guaranteed, however. Students must petition on special United States government forms, through the Office of International Programs, for permission to accept such employment.

## Academic Regulations

### Registration

Every resident student must register in person at the beginning of each semester, whether attending regular courses of study, carrying on research or independent reading, writing a thesis or dissertation, or utilizing any academic service or facility of the University. Students who have completed their resi-

dence requirements and who wish to utilize any academic service or facility of the University must also register.

There is a charge of \$10 if registration is not completed at the time specified in the academic calendar.

Registration consists of payment of all fees for the semester and filing a Program Card and other required forms duly completed.

## **Program of Study**

Before filing a Program Card, the student should plan a program of study in consultation with the chairman of the department. All courses for which the student registers for credit must be listed on the Program Card.

Audited courses must also be listed, noted as "audit," and the Program Card must be signed by instructors of such courses.

Graduate students may not normally register for an undergraduate course (numbered below 100) in their own area for degree or residence credit unless they secure the signed approval of both the instructor of that course and their department chairman. The student must then petition the Dean of the Graduate School for the desired credit, and must receive approval before or at the time of registration. Credit will not be given for undergraduate courses taken to make up deficiencies in the student's preparation for a graduate program of studies, nor will credit ordinarily be given for language courses that are not part of the student's program of studies. Under no circumstances may a student receive credit toward completion of degree or residence requirements for courses undertaken to aid in the completion of language requirements. Scholarship students may not apply their scholarships toward the remission of tuition for undergraduate courses taken to remedy deficiencies. The completed Program Card must be signed by the department chairman before submission at registration, and the department chairman will certify whether the program of study is full-time or part-time and, if part-time, whether one-quarter, one-half, or three-quarters time. Full-year courses must be re-entered on the Program Card at Spring registration, and ordinarily they may not be dropped at midyear. Students wishing to drop a full-year course at midyear must petition the Dean of the Graduate School for permission, after receiving the written approval of the instructor of the course and of the chairman of their department. Students may not register at midyear for a full-year course without the written approval of the instructor of the course and their department chairman.

## **Auditing Courses**

The privilege of auditing courses without fee is extended to all regularly enrolled graduate students except special students. Special students may audit courses by paying for them at the same rate as those taken for credit. No course

may be audited without the permission of the instructor. Auditors may not take examinations or expect evaluation from the instructor. No credit is given for an audited course.

## **Change of Program**

Registered students who wish to drop or add a course or alter programs of study must obtain a Course Change Card from the Graduate School Office and return it when properly filled out. Credit will not otherwise be given for the courses changed. In addition, students must change the program within the specified time limits stated in the current academic calendar, or be subject to a \$10 fine.

## **Registration in Terms of Time**

Advanced students—those who have completed one full year of residence, either by graduate work at Brandeis or by receiving credit for graduate work done elsewhere—may register in terms of time, subject to the signed approval of their department chairman. Their Program Cards must indicate that they are registering full-time or a specific fraction thereof (one-quarter, one-half, or three-quarters).

Registration in terms of time is a device that helps to individualize programs of study and permits increased freedom for independent research for advanced graduate students. Registration in terms of time frees students to pursue a program of study that partially accepts or bypasses altogether the system of formal courses, although students registering in terms of time will usually register for an advanced research or dissertation course. Their time will be spent in such research and reading as will be most beneficial to their development as scholars.

## **Absence from Examinations**

Students who are absent from a midyear or final examination without an accepted excuse will receive a failing grade for that examination. No students may be excused from such examination unless for emergency or medical reasons, nor may they be excused if they were able to notify the instructor in advance and failed to do so. Cases involving absence are referred to the chairman of the department who will decide whether a make-up examination shall be allowed, and will notify the Dean of the Graduate School. The examination must be taken within six weeks of the opening of the next semester.

## **Grades and Course Standards**

Graduate students are expected to maintain records of distinction in all courses. Letter grades will be used in all courses in which grading is possible.



Courses graded "Non-credit" are those which carry no credit but which are required of the student. In thesis or research courses, if a letter grade cannot be given at the end of each semester or academic year, "Credit" or "No Credit" may be used.

"No Credit" and any letter grade below B-minus are unsatisfactory grades in the Graduate School. A course in which the student receives an unsatisfactory grade will not be counted toward graduate credit.

At the end of each academic year the Registrar of the Graduate School will issue a report of grades and of degree requirements satisfactorily completed.

## **Incompletes**

A student who has not completed the research or written work for any course may receive a grade of "Inc." (incomplete) or a grade of failure at the discretion of the instructor in the course. A student who receives a grade of "Inc." must satisfactorily complete the work of the course in which the "Inc." was given in order to receive credit for the course and a letter grade. An "Inc.," unless given by reason of the student's failure to attend a final examination, must be made up no later than the end of the term following the term in which it was received. When failure to take a final examination has resulted in an "Inc.," resolution of that grade to a letter grade must occur within six weeks of the beginning of the next semester. If a student requires additional time to settle an incomplete grade, he or she may petition the Dean of the Graduate School for an extension of time, provided the petition is signed by the instructor of the course and by the department chairman. Such a petition must be filed prior to the expiration of the deadline for making up an incomplete.

## **Credit for Work Done Elsewhere**

Graduate work taken elsewhere may not be counted toward fulfillment of the residence requirement at Brandeis University for the degree of Master of Arts, although a department may accept work taken elsewhere in partial fulfillment of specific course requirements for the degree. Not more than one semester of residence credit for work taken elsewhere may be counted toward fulfillment of the residence requirement for the degree of Master of Fine Arts. Not more than one year of residence credit for work taken elsewhere may be counted toward fulfillment of the residence requirement for the degree of Doctor of Philosophy.

A student admitted to a Ph.D. program at Brandeis University who has done graduate work elsewhere may file an application to have the work at that institution counted toward fulfillment of residence requirements. However, language requirements, qualifying and comprehensive examinations, the dissertation and the final oral examination, and other such requirements must be fulfilled while enrolled at Brandeis.

To be eligible to receive credit toward fulfillment of residence requirements for work taken elsewhere, students must complete at least one semester's residence at Brandeis as full-time students. They may then file an "Application for Credit for Graduate Work Done Elsewhere" and submit it to the Graduate School Office, which will advise the student of the action taken on the application. An applicant will not necessarily be given the credit requested. Each department reserves the right to require of any student work in excess of its minimum standards to assure thorough mastery of the area of study. In any case, every candidate for the Ph.D. degree must complete at least one year in residence at Brandeis as a full-time student, or the equivalent thereof in part-time study.

## **Residence Requirements**

Residence requirements for all graduate degrees are computed by determining the amount of registration for credit and the tuition charges. Part-time students and teaching assistants pursuing part-time programs of study for credit complete their residence requirement when their fractional programs (one-quarter, one-half, three-quarters) total the amount required of a full-time student.

### **Master of Arts**

The minimum residence requirement for all students is one academic year on a full-time graduate credit program at the full tuition rate, or the equivalent thereof in part-time study.

### **Master of Fine Arts**

The minimum residence requirement for all students is three academic semesters on a full-time graduate credit program for each semester, at the full tuition rate for each semester, or the equivalent thereof in part-time study.

### **Doctor of Philosophy**

The minimum residence requirement for all students is two academic years on a full-time graduate credit program for each year, at the full tuition rate for each year, or the equivalent thereof in part-time study.

## **Full-Time Resident Students**

A full-time student is one who devotes the entire time, during the course of the academic year, to a program of graduate work at Brandeis University, to the exclusion of any occupation or employment. In exceptional cases, however, a student may accept outside employment with the approval of the department chairman.

A full-time program may include a combination of teaching and research assistance, work leading to the fulfillment of degree requirements, such as preparation for qualifying, comprehensive, and final examinations, or supervised reading and research, or the writing of M.A. theses and Ph.D. dissertations, as well as regular course work.

A full-time resident student may take as many courses for credit in any semester as are approved by the department chairman, but no student may receive credit for, or be charged for, more than a full-time program in any semester. Thus the minimum residence requirement for any degree may not be satisfied by an accelerated program of study or by payment of more than the full-time tuition rate.

Ph.D. candidates and students for whom the M.A. and M.F.A. degrees are terminal degrees may continue as full-time students on completion of their residence requirements by registering at the post-residence fee rate (see p. 38).

## **Part-Time Resident Students**

A part-time student is one who devotes less than the entire time to a program of graduate work at Brandeis University. Students may register for a credit program of one-quarter, one-half, or three-quarters time. A part-time student may engage in outside employment with the permission of the department chairman, who may restrict the time permitted for such employment.

Students wishing to pursue part-time resident study leading to a graduate degree must explain in writing, at the time they seek admission, why full-time study is not possible. Students receiving financial aid from the University, who wish to change their status from full-time to part-time residency, must file with the Graduate School Office an explanation of why full-time study is no longer possible.

## **Post-Resident Students**

A graduate student who has completed residence requirements and who registers in order to utilize academic services or University facilities while completing degree requirements is a post-resident student.

## **Special Students**

Properly qualified persons who wish to audit or to take courses without working for a degree will be admitted. Special students are not eligible for University loans, scholarships, fellowships, teaching or research assistantships, nor will they be considered for resident counsellorships. Special students who later wish to change their status to that of part-time or full-time students working for a degree must apply for admission as resident students. They must also file a special petition if they wish credit to be accepted for any courses taken at

Brandeis as special students. Credit for such course work may be granted in exceptional cases.

## **Leave of Absence**

Students who have not completed their residence requirements may petition for leave of absence. The petition must have the approval of both the chairman of the department and the Dean of the Graduate School. Leaves of absence up to one year will normally be granted to students in good academic standing who present compelling personal reasons or need to do work off campus in connection with their graduate studies. Time spent on authorized leaves of absence will not be deducted from the maximum time permitted to complete degree requirements.

If for any reason a student must extend a leave of absence, he or she must request such extension in writing before the leave of absence expires. Failure to do so will result in being automatically dropped from the Graduate School roster.

## **Continuation**

Graduate students who have completed residence requirements and who are not registered during the period in which they are completing degree requirements are considered Continuation Students. A student in this category is not eligible for a leave of absence. (See Fees, p. 38.)

## **Withdrawal**

A student who wishes to withdraw from the Graduate School at any time before the end of the academic year must give immediate written notice to the department chairman and to the Dean of the Graduate School. Failure to comply may subject the student to dishonorable discharge, refusal of readmission, cancellation of the privilege of securing an official transcript and, in the case of a student withdrawing within 30 days of the beginning of classes, loss of eligibility for partial refund of tuition. Such a student must pay tuition for the full semester. Permission to withdraw will not be granted if the student has not discharged all financial indebtedness to the University or has not made arrangements for subsequent payment to the satisfaction of the Controller's Office.

## **Exclusion, Dismissal or Expulsion**

The University reserves the right to dismiss or exclude at any time any student whose character, conduct, academic standing or financial indebtedness it regards as undesirable, through disciplinary procedures established in the Graduate School. Neither the University nor any of its Trustees or officers

shall be under any liability whatsoever for its disciplinary action, exclusion or dismissal.

The University also reserves the right to revoke, cancel or reduce at any time any financial or honorific award made to any graduate student, for character, conduct, academic standing or financial indebtedness regarded by the University as undesirable; neither the University nor any of its Trustees or officers shall be under any liability whatsoever for cancelling, revoking or reducing any award.



## General Degree Requirements

The following general requirements apply to the awarding of graduate degrees in all areas of study. For specific program requirements students should consult the appropriate section of this catalog.

### **Master of Arts**

In order to qualify for a Master's degree, the student must complete the equivalent of one full year of graduate study at Brandeis University, ordinarily computed at a minimum of twenty-four semester hours of approved study. Each course meeting three hours per week grants three credits per semester. Certain departments may, at their option, require more than twenty-four

hours of graduate study. All departments offering Master's programs require that the candidate demonstrate a reading knowledge of at least one foreign language and pass satisfactorily a general or qualifying examination which, at the department's discretion, may be in one or more parts and may be written, oral, or both. Where a thesis is required for the Master's degree, two copies must be submitted to the department chairman in final form no later than the first Friday in January for a February degree or April 15 for a June degree.

The Master's degree must be earned within four years from the inception of graduate study at Brandeis University.

## **Master of Fine Arts**

In order to qualify for the degree of Master of Fine Arts in Music, the candidate must complete with distinction thirty-six semester hours of course work at the graduate level, and must meet the specific requirements for the degree as set forth under the Music Department, *Requirements for the M.F.A. Degree*, in a later section of this catalog. Two copies of the thesis or composition must be submitted to the department chairman in final form no later than the first Friday in January for a February degree or April 15 for a June degree.

In order to qualify for the degree of Master of Fine Arts in Theater Arts, the candidate must complete forty-eight hours of course work at the graduate level and must meet the specific requirements for the degree outlined under Theater Arts, *Requirements for the M.F.A. Degree*, in a later section of this catalog. Students enrolled for specialization in play-writing must submit two copies of a play in final form in lieu of a thesis.

The Master of Fine Arts degree must be earned within five years from the inception of graduate study at Brandeis University.

## **Doctor of Philosophy**

In order to qualify for the degree of Doctor of Philosophy, a student must ordinarily complete a minimum of three years of graduate study, including two full years of residence and a third year devoted to the preparation of a doctoral dissertation. Under certain conditions credit for advanced standing will be granted for work taken in residence in graduate schools of other universities. Each department or committee reserves the right to require prospective candidates for the degree to perform work in excess of its minimum standards to assure thorough mastery of the area.

Prospective candidates must demonstrate proficiency in at least one foreign language. In all areas of study the student must satisfactorily pass a general or qualifying examination which, at the department's discretion, may be in one or more parts and may be written, oral, or both. In addition, all prospective candidates must write a doctoral dissertation and defend it in a final oral examination.

To be eligible for the Ph.D. degree in any given year, the student must have (1) been admitted to candidacy for the doctorate, (2) completed all residence requirements, and (3) passed all language and qualifying examinations, by the close of the semester preceding the semester in which the degree will be conferred.

Students entering Brandeis University with no previous graduate work must earn the Doctor's degree within eight years from the inception of study. Students who are granted credit for a year of graduate work completed elsewhere must earn the degree within seven years from the inception of their study at Brandeis.

## **Language Requirements**

A reading knowledge of at least one foreign language is required of all students engaged in programs of study leading to the M.A., the M.F.A. and the Ph.D. degrees. Several programs have additional language requirements. Each department or program determines which languages are acceptable as satisfying the foreign language requirements. For specific requirements of each program, consult the appropriate section of this catalog.

Students are expected to satisfy the language requirements as soon as possible. The completion of the language requirements at another university does not exempt the candidate from the Brandeis requirements.

A student who has not passed an examination in at least one foreign language by the end of the first year of study will not be eligible for financial aid from the University for the second year.

Many departments require that language examinations be passed at an earlier time than specified in these provisions. Special requirements will be found in the departmental statements included in this catalog.

## **Admission to Candidacy**

A student who (a) has demonstrated a knowledge and mastery of the subject matter of the field at a level satisfactory to the department or committee; (b) has passed all departmental qualifying examinations; (c) has indicated a capacity for independent research of high quality; and (d) has satisfactorily completed all specific department or committee requirements for admission to candidacy may, at the recommendation of the department or committee, be admitted under the rules of the Graduate Council to candidacy for the degree of Doctor of Philosophy. In order to be eligible for the degree, the student must be admitted to candidacy at least one semester before it is awarded.

## **Application for Graduate Degrees**

Candidates for the M.A., M.F.A., and Ph.D. degrees must file with the Graduate School Office an application for the degree no later than December 1 for a

February degree and no later than March 1 for a June degree of the academic year in which the degree is to be conferred. Upon the written recommendation by a candidate's department or committee that the application be approved, the record will be reviewed by the Graduate Council which recommends the student to the University's Board of Trustees for the degree. In case of failure or withdrawal from candidacy in any year, the student must reapply by filing a new application in a later year.

## **Dissertation and Final Oral Examination**

Two copies of the doctoral dissertation, as well as an abstract of the dissertation not to exceed six hundred words, should be submitted to the department or committee chairman. The style and format of all dissertations are determined by the respective departments. The chairman will then appoint two or more readers, besides the principal supervisor, to read the candidate's dissertation. Certification of the approval of the dissertation by these readers will be communicated to the Dean of the Graduate School and the chairman of the department or committee. The chairman will then schedule a final oral examination and notify both the Dean of the Graduate School and the candidate of the time and place of the examination at least three weeks prior to the scheduled date of the dissertation defense.

The dissertation, when approved by the readers, must then be deposited in the department where it will be available to all interested members of the faculty for at least two weeks prior to the final oral examination.

The Dean of the Graduate School will publish in the *Brandeis University Calendar* the time and place of a candidate's final oral examination and the title of the doctoral dissertation. The final oral examination will be open to any member of the faculty engaged in graduate instruction and to invited faculty members of other institutions.

The examining committee, recommended by the department chairman and approved by the Dean of the Graduate School must be composed of a minimum of three faculty examiners. At least one member of the committee shall be from a graduate area outside the student's own, though preferably from a related area.

The examination may be restricted to a defense of the dissertation, or may cover the whole field of the dissertation. The candidate will be notified by his or her department or committee of responsibility for coverage at the examination.

A report, signed by the examining committee, certifying the candidate's successful performance on the final oral examination, will be submitted to the Dean of the Graduate School.



## Deposit and Publication of Dissertation

No later than the dates specified in the current academic calendar for February and June degrees, the candidate must deposit two copies of the finished dissertation, including the original typescript, in a state suitable for microfilm and Xerox publication. Both copies of the dissertation must have the signed approval of the dissertation supervisor and readers. One copy will be retained by the library, the other will be returned to the student, both bound. The candidate must also submit two copies of an abstract of the dissertation, not exceeding 600 words, which has been approved by the dissertation supervisor.

A detailed statement of the Graduate School publication regulations is available from the Graduate School Office. See also the statement in this catalog, under *Fees*, on the Final Doctoral Fee.

## Fees

Payment of tuition and other fees due on the day of registration is a part of the registration procedure. A student who is not prepared to pay such fees on the day of registration will be refused the privilege of registration. A registered student who defaults in the payment of a subsequent indebtedness to the University shall be subject to suspension, dismissal, and refusal of a transfer of credits or issuance of a transcript. If the student is a degree candidate, his or her name will be stricken from the rolls. A student who has been suspended or dismissed for nonpayment of indebtedness to the University may not be reinstated until such indebtedness is paid in full.

*Application Fee:* \$20. Payable by all applicants for admission at the time the application for admission is submitted. It is not refundable. Checks and money orders should be made payable to Brandeis University. No application for admission will be processed until this fee is paid. This fee is not required of Brandeis graduates.

*Tuition Fee:* The fees for tuition in the Graduate School for 1975-76 are as follows:

Full-time resident students: \$3,550 per year, or \$1,775 per semester.

Part-time resident students:

<i>Per Semester</i>	<i>Per Year</i>	<i>Fraction Program of Study</i>
\$1,331.25	\$2,662.50	Three-quarters
\$ 887.50	\$1,775.00	One-half
\$ 443.75	\$ 887.50	One-quarter

Special Students: \$443.75 per course per semester.

In view of the constantly increasing costs of education, students may expect one or more tuition increases during their academic careers.

*Post-Residence Fee:* Students who have completed their residence requirements and who wish to continue in residence to utilize any academic service or University facility must register at the usual tuition rates. Graduate students whose tuition is not being paid from scholarship or fellowship funds awarded by the University or other sources may petition the Dean of the Graduate School for a reduction of the post-residence fee to \$250. Students who continue to utilize any academic service or University facility after having completed residence, but who have failed to register, are subject to disciplinary action by the Dean of the Graduate School. A student who is eligible for registration on the post-residence basis may file a program card for full-time study, in terms of courses or in terms of time or any combination thereof, provided the department chairman approves of the program of study as being a full-time program and signs the program card.

*Mixed Tuition Fee:* In the event that a student needs to register for only a part-time program (one-quarter, one-half, or three-quarters) in order to complete residence requirements, but wishes to register for additional courses or take a fuller program of study, he or she shall be charged for the part-time program needed to complete residence, plus the post-residence fee.

*Summer Tuition Fee:* Brandeis University does not conduct a regular summer school session. However, special courses of study on an individual basis may be arranged for regular students. The tuition for graduate students who remain in residence for special summer programs of a twelve week duration is \$500, and of an eight week duration, \$350.

*Late Registration Fee:* \$10. Payable for failure to complete registration at the time announced by the Graduate School Office.

*Change-of-Program Fee:* \$10. Payable by any graduate student who wishes to change a program of study after filing Study Cards.

*Continuation Fee:* \$20. Payable annually by graduate students who have completed residence requirements and who are not registered during the period in which they are preparing for the completion of degree requirements. Students in this category are not eligible for leaves of absence.

*Master's Fee:* \$50. A candidate for the M.A. or the M.F.A. who is subject to the Continuation Fee and who submits a Master's thesis or takes a qualifying examination in any semester following one in which he or she has not been in residence, shall pay the Master's Fee. The fee is chargeable only once. The Continuation Fee will be applied toward payment of the Master's Fee.

*Final Doctoral Fee: \$250.* This fee covers all costs for the year in which the Ph.D. degree will be conferred, including the costs for the microfilm publication of the dissertation, publication of the abstract of the dissertation in *Dissertation Abstracts*, copyright protection for the author if desired, issuance of a Library of Congress number and appropriate library cards, binding two copies of the dissertation, one for use in the University Library, and one Xerox-printed copy in book form for the author. The Final Doctoral Fee also covers the rental expenses for academic robes for graduation and cost of the diploma. Students who have been in residence in their final year may deduct any tuition charges which they may have paid to the University in that final year. Students who have paid the Continuation Fee in the final year may deduct that fee from the Final Doctoral Fee.

*NOTE:* All candidates for the Ph.D. degree must pay the \$250 Final Doctoral Fee prior to the receipt of their degrees.

*Reinstatement Fee: \$10.* Payable by a student who, after suspension or dismissal, has been reinstated with the consent of the Dean of the Graduate School.

*Transcript Fee: \$2.* Students, former students, and graduates who request official transcripts of their records in the Graduate School are charged \$2 for each copy issued after the first one, which is free. Requests by mail for transcripts must be accompanied by a check in the correct amount, payable to Brandeis University.

*Diploma Fee: \$10.* Payable by candidates for the M.A. and M.F.A. degrees.

*Student Insurance Fee: \$141.* Payment of the Insurance Fee entitles the graduate student to participate in the benefits of the Health Insurance Program. The fee is payable at registration and no portion is refundable. Student Insurance is optional for special students.

*Student Health Fee: \$30.* Entitles the graduate student to use of the Health Services. This fee is mandatory for regular graduate students.

*Dependent Coverage:* Although the health services offered at Stoneman Infirmary are not extended to dependents of students, an optional family health insurance plan is available to married students for a fee of \$622. Special Students are not eligible for this plan.

## **Refunds**

The only fee which may be refundable, in part, is the tuition fee. No refund of the tuition fee will be made because of illness, absence or dismissal during the academic year. If a student withdraws, he or she may petition the Dean of the Graduate School for a partial refund of tuition in accordance with the following:

1. *Tuition:*

*Withdrawal:* Before the opening day of instruction: 100% of semester tuition.

On or before the second Friday following the opening day of instruction: 75% of semester tuition.

On or before the fifth Friday following the opening day of instruction: 50% of semester tuition.

After the fifth Friday following the opening day of instruction: no refund.

2. *Scholarships:* In the case of a scholarship student who withdraws, the student's account will be credited with the same proportion of the semester scholarship as charged for tuition: 25% if the student leaves on or before the second Friday; 50% on or before the fifth Friday; and, 100% thereafter. The balance of the scholarship will be cancelled.

All refunds are subject to review and final approval of the Controller and will be disbursed by him upon written request.

## Financial Assistance

To help students whose records indicate scholarly promise, the University makes available a variety of awards and work opportunities. No student is eligible for aid without filing with the Graduate School Office an "Application for Financial Assistance." In exceptional circumstances applications received from prospective students later than this date may be given consideration. All scholarships and fellowships are granted for one academic year; therefore, a registered student who holds a scholarship or fellowship must apply for a renewal by filing the "Application for Financial Assistance."

All awards are granted and accepted with the understanding that they may be revoked or reduced at any time for undesirable conduct or academic standing.

Ordinarily, no student may hold a fellowship, scholarship, or teaching assistantship for more than two years of study for the M.A. degree, for more than three years of study for the M.F.A. degree, or for more than four years of study for the Ph.D. degree. No student may receive a scholarship, fellowship, or teaching assistantship after one year of study at the post-residence fee. Part-time students are ineligible for fellowship awards, but may be considered for scholarship awards. Teaching assistants who are part-time students may apply for scholarships. Priority in making awards is given to full-time students and teaching assistants.

In the case of a student receiving financial aid from Brandeis University, whether in the form of a teaching assistantship, scholarship or fellowship, the approval of the Dean of the Graduate School is required, in addition to the approval of the department chairman, before the student may engage in outside employment. Approval is not normally granted in the case of full-time students receiving financial aid from the University.



## Scholarships

A scholarship is an award, on grounds of scholarly ability and need, of financial credit that may be used exclusively for remission of tuition fees. Full schol-

arships in the value of \$3,550 and partial scholarships are available. Scholarship students are liable for all but tuition charges.

## **Fellowships**

A fellowship is an academic award of honor to outstanding students of good character to help them in furthering advanced study and research. Fellowships carry stipends ranging up to \$2,500 in the graduate programs in the humanities and social sciences and up to \$4,000 in the graduate science programs. The amount of the stipend depends on the quality of the student's record and performance; need is also considered in most cases. A fellowship recipient must pay tuition fees unless the award includes a scholarship in an amount covering tuition. No services are required of students for fellowship or scholarship awards.

## **Teaching Assistantships**

Teaching assistants are resident students in the Graduate School who do part-time teaching as part of their training and are paid. The University has established teaching assistantships to enable distinguished graduate students to gain teaching experience while continuing their studies. Teaching assistants are eligible for other awards, including scholarships and fellowships.

A full-time student who is a teaching assistant receives residence credit for, and is charged tuition for, that fraction of the program spent as a student in fulfillment of degree and residence requirements.

First-year graduate students are eligible for appointment as teaching assistants in the sciences. In other areas, however, first-year students are rarely appointed. Foreign students are not normally eligible for appointment as teaching assistants in their first year of graduate work unless they have had training at another American university.

Teaching assistantship appointments are made on the authority of the President of the University by the Dean of the Graduate School who, in turn, acts on the recommendation of a student's department chairman. A graduate student who is interested in being appointed as a teaching assistant should write or see his or her chairman. Appointments are made for periods of one year or one semester, but are renewable. All awards of teaching assistantships to incoming students are conditioned on an interview with a University representative, prior to registration. The University reserves the right to terminate any appointment at any time for due cause. Conduct, character or academic standing that is regarded as undesirable may constitute cause, but the University need not assign any reason for the termination of an appointment at any time. All teaching assistantship appointments are made and accepted with this understanding, and neither the University nor any of its Trustees or officers

shall be under any liability whatsoever for the summary termination of a teaching assistantship.

## **Research Assistantships**

Research assistantships, which sometimes carry stipends in excess of \$4,000, are available in the science areas. First-year graduate students are not normally eligible for appointment. Application should be made to the chairman of the department or committee administering the graduate program.

## **Loan Funds**

Brandeis University participates in the Federally Insured Student Loan Program (FISLP). This permits graduate students registered for at least a half-time program and who are U. S. citizens, nationals, or in the United States for other than a temporary purpose, to borrow up to \$1,500 in any academic year. These loans are also available to the student from some lending institutions in his or her home state. The University will provide from its own resources, FISLP loans on the recommendation of the graduate program and approval of the Dean of the Graduate School. Special students are not eligible for loan funds through the University.

Students who plan to borrow through Brandeis University or any other source which participates in the Federally Insured Student Loan Program must have on file at the Graduate School Office a current Graduate and Professional Student Financial Aid Service form (GAPSFAS). Forms may be obtained at the Graduate School Office or from the Educational Testing Service, Princeton, N.J. No FISLP loan can be processed until this form is received.

## **Resident Counselorships**

A limited number of positions are available for both married and unmarried men and women as counselors in the University residence halls. Applications may be obtained from the University Residence Halls Office and should be returned no later than April 15. Appointments are made by the Residence Hall Officer on recommendation of the Dean of the Graduate School on or before June 25.

## **Office of Student Employment**

The Office of Student Employment assists students who need and desire part-time work. Students seeking part-time work should register with the Office of Student Employment. New students are not assigned part-time work prior to arrival on campus.





# Areas of Study and Courses—1974-1975

All courses meet for three hours a week unless the course description indicates otherwise. The presence of "a" in the course number indicates a half course given in the Fall Term; "aA" indicates a full course given in the Fall Term; "b" indicates a half course given in the Spring Term; "bB" indicates a full course given in the Spring Term; "aR" indicates a course given in the Spring Term, "bR," a course given in the Fall Term which is identical with an "a" or "b" course of the same number given in the Fall and Spring Terms respectively; the use of "c" after a course number indicates that the course is given as a half course but meets throughout the year.

The University reserves the right to make any changes in the offerings without prior notice.

## AMERICAN CIVILIZATION

See History of American Civilization (page 89).

## ANTHROPOLOGY

### Objectives

The graduate program in anthropology is designed primarily to train students at the doctoral level. The objective is to provide the student with a broad understanding of the four major fields of anthropology, with particular stress on ethnology and social anthropology, and to prepare the student for independent research and scholarship. Accordingly, there is a strong emphasis on training in comparative work and field work, which are integral parts of the doctoral program.

### Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. Students need not have an undergraduate major in anthropology or sociology-anthropology. If admitted, however, the student without previous training in anthropology may be required to take additional courses, as determined by the department, to complete his residence requirements. Students should have a reading knowledge of one foreign language.

### Faculty

Professor HELEN CODERE, *Chairwoman*: Method and theory. Economic anthropology. Primitive art. Africa.

Professor DAVID KAPLAN: Economics. Method and theory. Mexico.

Professor ROBERT A. MANNERS: American Indians. Modern cultures. Method and theory. Africa.

Professor ALEX WEINGROD: Modernization. Peasant societies. Mediterranean.

Associate Professor GEORGE L. COWGILL: Archaeology. Mathematical and computer methods in anthropology. Early civilizations, especially Mesoamerica.

Associate Professor ROBERT C. HUNT: Social anthropology. Modernization. Mesoamerica.

†Associate Professor DAVID E. JACOBSON: Social anthropology. Urban social organization. Africa.

Associate Professor MARGUERITE S. ROBINSON: Social organization. South Asia.

Associate Professor BENSON SALER: Culture and personality. Primitive philosophies and religion. Formal analysis. Middle America. South America.

Assistant Professor JOAN BAMBERGER: Social anthropology. Ritual and myth. South America.

Assistant Professor DAVID A. HERR: Physical anthropology. Primate studies.

Assistant Professor JUDITH T. IRVINE: Ethnography of communication. Linguistics. Africa.

Assistant Professor E. CRAIG MORRIS: Archaeology. South America.

## Degree Requirements

### Master of Arts

No one will be accepted in the program who is not a doctoral candidate. However, the M.A. degree will be awarded upon successful completion of the following requirements: a minimum of twenty-four course credits, a high passing grade in a written qualifying examination in cultural anthropology, demonstration of proficiency in one foreign language, and a research paper based on a subject chosen by the student in consultation with his adviser.

### Doctor of Philosophy

*Admission to the Program.* Students who complete the first year qualifying examination at a high level will be admitted to the Ph.D. program. Students with an M.A. in anthropology from other institutions, or with a minimum of a full academic year of graduate course work in anthropology from other institutions, may be admitted as prospective candidates for the Ph.D. degree. After a minimum of one semester's work, the Department may, at its discretion, grant the student transfer credit of up to one year toward the Ph.D. residence requirements. In most instances, transfer students will be required to pass the first-year qualifying examination, but, at the discretion of the Department, this may be waived.

*Program of Study.* During their first year of residence, students are assigned to an adviser with whom they design their course and research program. Maximum flexibility is encouraged regarding the choice and timing of course work. Doctoral candidates must complete two years of residence at Brandeis, and a minimum of forty-eight hours of credits. Work done at other institutions may be counted as part of residence, as stipulated above and in the general rules of the Graduate School. At least thirty-six course credits must be in anthropology.

Students concentrating in cultural anthropology select areal and topical courses in their field of special interest. It is expected that students will attain a scholarly competence in at least one culture area and a topic of study. In addition, students are required to pass course examinations in statistics, physical anthropology, archaeology, and linguistics. The pre-doctoral examination in cultural anthropology, normally given following two or three years of residence, includes questions based on the student's particular area and topical interests.

Students concentrating in archaeology must meet most of the same requirements as those concentrating in cultural anthropology. They will be expected to pass the first-year qualifying examination in cultural anthropology. The pre-doctoral examination will emphasize archaeology, but will also include other fields of anthropology.

† On Leave 1974-75.

*Language Requirement.* For Ph.D. candidates, the foreign language requirements include the satisfactory completion of the M.A. language examination and a research paper based upon sources in a foreign language.

*Summer Training Program.* A selected group of students in the Ph.D. program will be invited each year to participate in a summer field-training program under the direction of a faculty member. No students will be admitted to this program unless they have passed the qualifying examination in cultural anthropology.

*Admission to Candidacy.* A student is admitted to candidacy on satisfactory completion of the following: the general qualifying examination (where required); an examination in at least one foreign language; forty-eight hours of course credits; and a pre-doctoral examination which may cover any aspect of anthropology and tests the scope of the student's knowledge and his or her ability to integrate that knowledge.

*Field Work for the Dissertation.* As soon as possible after qualifying for candidacy for the Ph.D., the candidate will be expected to begin a full year of field research, which will ordinarily form the basis of the dissertation.

*Dissertation and Defense.* The degree of Ph.D. will be awarded only after successful defense of the dissertation.

## **Courses of Instruction**

### **ANTHROPOLOGY 100a. Interdisciplinary Pro-Seminar in Latin American Studies**

See Latin American Studies 100a or History 173a for description. *Ms. Bamberger*

### **ANTHROPOLOGY 102a. Anthropological Linguistics I**

An introduction to linguistics from an anthropological perspective. The course will stress: 1) how to deal with unfamiliar languages, and 2) the development of linguistic theory (syntax and phonology) in the 20th century. Readings in linguistic theory, especially on current trends, will be combined with practical work on languages from various parts of the world. *Ms. Irvine*

### **ANTHROPOLOGY 102b. Anthropological Linguistics II**

The study of language use and variation. Topics include: semantics; language change; language acquisition; and sociolinguistics (language variants and social groupings; language in social interaction). Problems of relating linguistic theory to variation and social context will also be considered.

*Prerequisite:* Anthropology 102a or English 191a.

*Ms. Irvine*

### **\*ANTHROPOLOGY 103b. Language and Culture**

### **ANTHROPOLOGY 105a. Ritual, Myth and Symbol**

A study of the social dynamics of ritual behavior, mythology and symbolism in primitive society. *Ms. Bamberger*

### **ANTHROPOLOGY 109b. Archaeological Methods**

Basic archaeological procedures for reconnaissance, excavation, and analysis of data; some important aspects of primitive technology; a survey of recently developed instruments and techniques for finding, dating, and analyzing ancient materials; and problems in archaeological theory. *Mr. Morris*

### **ANTHROPOLOGY 110aR. Physical Anthropology**

An introduction to the methods and materials of physical anthropology. A brief, intensive survey of non-primate and human evolution and fossil man. A study of human adaptation and the distribution of modern man in terms of morphology, genetics, geographical distribution, culture and environmental factors. *Mr. Horr*

\* Not to be given in 1974-75.

**ANTHROPOLOGY 111a. Primates**

An intensive introduction to the study of non-human primates with emphasis on ethnology and primate behavior. An enquiry into the evolution of human behavior from a primate matrix, and the use of living non-human primates in understanding the nature of modern man.

*Mr. Horr*

**ANTHROPOLOGY 112bR. Evolution and Natural Selection**

A course designed to present the history and modern theory of evolution. A basic understanding of how natural selection and evolution operate, including detailed examination of some of the basic mechanisms of evolution.

*Mr. Horr*

**\*ANTHROPOLOGY 115a. Culture and Biology**

**ANTHROPOLOGY 123a. Archaeology and Prehistory**

A study of man's prehistoric cultures and the concepts and methods used by archaeologists in obtaining and interpreting data about these early cultures.

*Mr. Morris*

**ANTHROPOLOGY 124a. Civilizations of Mesoamerica**

The development of complex societies in Mexico and Guatemala, their history, social and political institutions, art, religion, and literature. Most emphasis will be on the Olmecs, Maya, the Teotihuacan civilization of central Mexico and the Aztecs.

*Mr. Cowgill*

**\*ANTHROPOLOGY 125b. Origins of East Asian Civilizations**

**ANTHROPOLOGY 127aR. The First Complex Societies and Cities**

A comparative study of the origins and functioning of early urban societies and states. Social, political, economic, ideological, technical and ecological factors are emphasized. The aim is toward better understanding of developmental processes. Somewhat different examples are chosen in different years.

*Prerequisite:* Permission of the instructor.

*Mr. Cowgill*

**ANTHROPOLOGY 128a and b. The Archaeology of the Aegean and the Near East**

See Mediterranean Studies 112 for description.

*Mr. Todd*

**ANTHROPOLOGY 129a. The Neolithic Period in Anatolia**

See Mediterranean Studies 119a for description.

*Mr. Todd*

**\*ANTHROPOLOGY 133a. Modern Africa**

**\*ANTHROPOLOGY 135b. Peoples and Cultures of India**

**\*ANTHROPOLOGY 140a. Prehistory of North American Indians**

**ANTHROPOLOGY 141b. The American Indian**

A survey of the peoples and cultures of aboriginal North America.

*Mr. Manners*

**\*ANTHROPOLOGY 143b. Modern Culture of Middle America**

**ANTHROPOLOGY 144aR. Indians of South America**

Readings in the literature of Indian populations in lowland South America.

*Mr. Saler*

**\*ANTHROPOLOGY 144b. Social Anthropology of Contemporary South America**

\* Not to be given in 1974-75.

**ANTHROPOLOGY 145b. The Development of Andean Civilization**

A developmental perspective on the Andean peoples from the initial occupation of the area to the present. Special emphasis will be placed on the Inca, and the fate of native traditions in the modern setting will be briefly examined. *Mr. Morris*

**ANTHROPOLOGY 151a. Social Organization I**

Theories of social organization, the interrelations of social institutions, current anthropological methods of interpretation and analysis. *Mr. Jacobson*

**ANTHROPOLOGY 151b. Social Organization II**

A continuation of 151a. This course will emphasize structural analysis. Designed primarily for advanced undergraduate and graduate students. *Mr. Saler*

**ANTHROPOLOGY 152b. Economic Anthropology**

Economic institutions of non-industrial societies. *Ms. Codere*

**\*ANTHROPOLOGY 153a. Primitive Art**

**ANTHROPOLOGY 153b. Ethnomusicology**

See Music 180b for description. *Mr. Titcomb*

**ANTHROPOLOGY 154a. Comparative Religion**

An exploration of belief and behavior in societies of non-literate peoples with reference to theories concerning the origins and functions of religion. *Mr. Saler*

**\*ANTHROPOLOGY 154b.**

**ANTHROPOLOGY 155bR. Psychological Anthropology**

An examination of the relationships between sociocultural systems and individual psychological processes with a critical evaluation of selected theories and studies bearing on this problem. *Mr. Saler*

**ANTHROPOLOGY 156a. Political Anthropology**

Survey of anthropological theories of government, politics, conflict and social control. Students will do field research in local political contexts. *Mr. Weingrod*

**ANTHROPOLOGY 156b. Selected Topics in Political Anthropology**

Analysis of issues and problems in the anthropological study of politics. *Mr. Weingrod*

**ANTHROPOLOGY 158aR. Urban Anthropology**

Selected problems in the description and analysis of urban social organization. *Mr. Jacobson*

**\*ANTHROPOLOGY 158b. Selected Topics in Urban Anthropology**

**ANTHROPOLOGY 159aR. Anthropology and Contemporary Issues**

The relevance of anthropological methods, theory and findings to an understanding of some contemporary social issues. *Mr. Manners*

**\*ANTHROPOLOGY 160b. An Anthropological Perspective on the Third World**

**ANTHROPOLOGY 161b. Culture and Cognition**

An exploration of techniques used by anthropologists to discover and analyze cognitive systems (systems of meaning, categorization, and planning) in different cultures. *Ms. Irvine*

\* Not to be given in 1974-75.

**ANTHROPOLOGY 165a. Modernization and Social Change**

Exploration of selected problems and processes of modernization with reference to both the "developed" and the "underdeveloped" states and the relationships between them. *Mr. Weingrod*

**ANTHROPOLOGY 170aR. Peasant Cultures: Past and Present**

Representative agrarian cultures will be dealt with in detail, with particular emphasis on the interrelationship among the city, the rural community and the state. *Messrs. Kaplan and Weingrod*

**ANTHROPOLOGY 171a. The Comparative Method**

A survey of the comparative method in anthropology. Special emphasis will be given to selected problems, e.g., units of analysis, data quality control, measuring covariation, validity of premises in concept systems. *Mr. Hunt*

**ANTHROPOLOGY 172b. Social Change in Israel**

An analysis of recent social and political trends in Israeli society. Particular attention will be given to processes of social mobility, ethnic integration, and elite formation. *Mr. Weingrod*

**ANTHROPOLOGY 175a. Pro-Seminar in Anthropological Theory: I**

Analysis of representative classics in anthropology. *Ms. Codere*

**ANTHROPOLOGY 175b. Pro-Seminar in Method in Cultural Anthropology: II**

The development of anthropological theory, major present-day trends and their relation to problems of research. *Mr. Kaplan*

**ANTHROPOLOGY 177b. Archaeological Method and Theory**

An examination of important techniques, and theoretical and methodological issues in contemporary archaeology.

*Prerequisite:* Permission of the instructor.

*Mr. Cowgill*

**\*ANTHROPOLOGY 180b. Historical Anthropology**

**ANTHROPOLOGY 185a. Mathematical and Computer Methods in Archaeology**

An introduction to statistics and to computers, and a survey of applications in archaeology. *Mr. Cowgill*

**ANTHROPOLOGY 190a. Comparative Social Stratification**

Course will deal with the evolution of social stratification systems in primitive pre-industrial and industrial societies. Major theories of social stratification will be critically evaluated. *Mr. Kaplan*

**Primarily for Graduate Students**

**\*ANTHROPOLOGY 210b. Special Topics in Anthropological Analysis**

**\*ANTHROPOLOGY 212a. Behavioral Anthropology I**

**ANTHROPOLOGY 212b. Behavioral Anthropology II**

A continuation of Anthropology 212a.

*Mr. Horr*

**ANTHROPOLOGY 226a and b. Readings in Research in Archaeology** *Mr. Cowgill*

**ANTHROPOLOGY 227a and b. Readings in Research in Linguistics** *Ms. Irvine*

**ANTHROPOLOGY 228a and b. Advanced Readings in Method and Theory**

*Messrs. Kaplan and Manners*

\* Not to be given in 1974-75.

- ANTHROPOLOGY 229a and b. Guided Comparative and Historical Research**  
*Ms. Codere and Mr. Hunt*
- ANTHROPOLOGY 230a and b. Readings and Research on Culture of Hunters and Gatherers**  
*Ms. Bamberger*
- ANTHROPOLOGY 231a and b. Readings in Cognitive Culture**  
*Mr. Saler*
- ANTHROPOLOGY 235a and b. Readings and Research in Latin American Cultures**  
*Mr. Hunt*
- ANTHROPOLOGY 236a and b. Readings and Research on East and South Asia**  
*Ms. Robinson*
- ANTHROPOLOGY 237a and b. Readings and Research in African Cultures**  
*Mr. Jacobson*
- ANTHROPOLOGY 238a and b. Readings and Research in Urban Anthropology**  
*Mr. Jacobson*
- ANTHROPOLOGY 239a and b. Readings and Research in North American Indian Cultures**  
*Mr. Manners*
- ANTHROPOLOGY 240a and b. Readings and Research in Cultures of the Mediterranean**  
*Mr. Weingrod*
- ANTHROPOLOGY 245a and b. Readings and Research in Physical Anthropology**  
*Mr. Horr*
- ANTHROPOLOGY 300a and b. Seminar in Anthropological Field Work**  
Consideration of selected field studies. *Required of all graduate students.* *Mr. Hunt*
- ANTHROPOLOGY 302. Summer Research Training**  
Field work for three months during the summer under the supervision of a member of the staff. *Staff*
- ANTHROPOLOGY 303b. Seminar in Inter-cultural Tensions**  
This course will consider some of the individual, social and socio-psychological consequences of cultural change associated with increasing contact among ethnic, tribal, occupational and class groups in contemporary cultures.  
Open to graduate students from other departments with permission of instructor.  
*Mr. Hunt*
- ANTHROPOLOGY 304. Research in Archaeological Field Methods**  
*Mr. Morris*
- ANTHROPOLOGY 305. Anthropological Colloquium**  
*Staff*
- ANTHROPOLOGY 350a and b. Anthropological Review**  
*Staff*
- ANTHROPOLOGY 400-410. Dissertation Research**  
Independent research for the Ph.D. degree.
- |                           |                          |
|---------------------------|--------------------------|
| 400. <i>Ms. Codere</i>    | 406. <i>Mr. Manners</i>  |
| 401. <i>Mr. Cowgill</i>   | 407. <i>Mr. Kaplan</i>   |
| 402. <i>Mr. Jacobson</i>  | 408. <i>Ms. Robinson</i> |
| 403. <i>Mr. Hunt</i>      | 409. <i>Mr. Saler</i>    |
| 404. <i>Mr. Horr</i>      | 410. <i>Mr. Weingrod</i> |
| 405. <i>Ms. Bamberger</i> |                          |

# BIOCHEMISTRY

## Objectives

The graduate program in biochemistry leading to the degree of Doctor of Philosophy is designed to equip students with a broad understanding of the chemistry involved in biological processes and to train them to carry out independent original research. Although students will be primarily responsible for a comprehensive understanding of biochemical phenomena, they will be encouraged to acquaint themselves with the disciplines of biology and chemistry. Research and experimental projects rather than formal course training will be emphasized. The student will, however, be required to take courses in advanced biochemistry, organic chemistry, physical biochemistry, biochemical techniques, molecular biology and biochemistry seminars. The choice of advanced biochemistry courses and those of other scientific disciplines (i.e., organic chemistry, genetics, embryology, etc.) are subject to the student's particular interests. The choice of research programs should be in areas under investigation by the faculty; some of these fields include metabolic regulation in normal and also tumor tissues, enzymology, immunochemistry, radiobiology, biochemical genetics, bacterial and phage genetics, physical chemistry of macromolecules, protein chemistry, plant and virus metabolism, problems in growth and differentiation, photobiology, microbial metabolism, and organic biochemistry.

## Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply here. Applicants for admission to the Biochemistry Department are also required to take the Graduate Record Examination. It is strongly suggested that the applicant take one of the advanced sections (preferably chemistry or biology) of this examination. The student's undergraduate curriculum should include some fundamental courses in biology and chemistry which will be subject to final staff approval.

## Faculty

Professor ROBERT H. ABELES, *Chairman*: Mechanism of enzyme action, with particular reference to the mechanism of action of reactions involving derivatives of Vitamin B-12 and the mechanism of isomerizations.

†Professor GERALD D. FASMAN: Conformation of biological macromolecules. Protein models, synthesis, conformational studies and biological properties of polyamino acids. Polyribonucleic acids conformational studies.

Professor DAVID M. FREIFELDER: Structure and function of DNA. Bacterial and phage genetics. Structure of bacterial episomes.

Professor LAWRENCE GROSSMAN: Enzymatic repair of damaged deoxyribonucleic acid at the biochemical, macromolecular, and biological levels. Enzymes involved in the modification and synthesis of nucleic acids in prokaryotic and eukaryotic systems.

Professor WILLIAM P. JENCKS: Mechanisms of reactions catalyzed by enzymes, coenzymes, and by chemical catalysts. Effects of salt and denaturing agents on proteins. Mechanisms, catalysis and equilibria of reactions of "energy-rich" compounds of importance in biochemistry and chemistry.

Professor LAWRENCE LEVINE: Immunochemistry. Effect of antigenic conformation on the antigen-antibody reaction.

† On leave, 1974-75.



Professor JOHN M. LOWENSTEIN: Metabolic regulation of carbohydrate utilization and fat synthesis. The interaction of metabolic pathways. Regulation and function of the purine nucleotide cycle; regulation of adenosine production in heart.

Professor ALFRED G. REDFIELD: Magnetic resonance in biopolymers. Physical biochemistry.

Professor SERGE N. TIMASHEFF: Physical chemistry of proteins, in particular, structure in solution and interactions of proteins. Effects of amino acid substitution in genetic variants; macromolecular properties of biological polymers.

Professor HELEN VAN VUNAKIS: Interaction of hallucinogenic, narcotic and carcinogenic compounds with specific antibodies and natural receptors. Protein structure. Photodynamic action of dyes on nucleic acids.

Associate Professor THOMAS C. HOLLOCHER JR.: Role and mechanism of action of oxidation-reduction enzymes and the paramagnetic properties of enzymes. Mechanism of denitrification. Biochemical aspects of environmental problems.

Associate Professor SUSAN LOWEY: Structure and function of myofibrillar proteins and their relation to the muscle cell. Techniques will include physical chemistry, protein chemistry, fluorescence and electron microscopy.

Associate Professor WILLIAM T. MURAKAMI: Biochemistry of virus infection. Metabolism of virus-infected cells. Purification and characterization of animal viruses.

Associate Professor ROBERT F. SCHLEIF: Molecular biology. Mechanism of regulation in bacteria and their viruses.

Associate Professor MORRIS SOODAK: Aspects of the metabolism of the thyroid gland. Mechanism of iodination and the mode of action of the goitrogenic drugs are being investigated in cell-free preparations of thyroid tissues.

Assistant Professor JEN-SHIANG HONG: Membrane functions. Mechanism of active transport in bacteria.

## Degree Requirements

### Doctor of Philosophy

*Program of Study.* Each doctoral candidate must satisfactorily complete the following fundamental courses: advanced biochemistry, biochemical techniques, physical biochemistry and biochemical research problems, and four of the biochemistry seminars.

*Language Requirement.* A reading knowledge of German is required. This language requirement must be completed satisfactorily prior to the oral qualifying examination.

*Qualifying Examinations.* An oral qualifying examination must be taken generally at the beginning of the second year. In this examination, the student will be asked to defend or refute two propositions. One proposition will be assigned in an area of research outside the student's immediate area of specialization, and one will be an original proposition put forth by the student for a research problem in his or her area of interest (this is not necessarily a problem upon which he or she will carry out research).

In addition, the student will have an opportunity to demonstrate general knowledge of biochemistry in a series of three area examinations: physical biochemistry and macromolecules, metabolism and enzymology, and molecular biology. The first area examination will be held at approximately the same time as the proposition defense, and the second area examination at approximately the same time as the research report (see below). The third area can be defended at the same time as one of the first two or later. This general knowledge outside the student's own field of specialization

must be demonstrated to the satisfaction of an advisory committee of four Department faculty members.

*Admission to Candidacy.* At some time before the second semester of their third year, students will present to a committee of four members of the Department a summary of their research accomplished to date, including the most significant experimental data and detailed plans for the completion of a research project. The committee will recommend whether the research project should be continued as a partial fulfillment of the requirements for the Master's or Doctor of Philosophy degree. After completion of the research report and the three area examinations at a level satisfactory for the Ph.D. degree, the student will be admitted to candidacy.

*Dissertation and Defense.* A dissertation will be required which summarizes the results of an original investigation of an approved subject and which demonstrates the competence of the candidate in independent research.

## Courses of Instruction

### **BIOCHEMISTRY 100a. Introductory Biochemistry**

Chemistry, reactions and metabolism of biologically important compounds. Formation and utilization of "energy-rich" compounds. Introduction to enzyme mechanisms. An attempt will be made to interrelate and compare basic biochemical and chemical processes.

*Prerequisite:* Chemistry 25a and b.

*Messrs. Abeles and Jencks*

### **BIOCHEMISTRY 100aR. Introductory Biochemistry**

*Mr. Hollocher*

### **BIOCHEMISTRY 101a and b. Advanced Biochemistry**

A discussion of enzyme reactions including energetics, kinetics, and reaction mechanism. Metabolism of carbohydrates, lipids, amino acids, nucleic acids, vitamins and coenzymes, hormones and inorganic substances. Coupled enzyme reactions, such as oxidative phosphorylation, and the synthesis of macromolecules such as glycogen, protein and the nucleic acids.

*Prerequisites:* Chemistry 25a and b, Biochemistry 100a or their equivalent. Some background in elementary physical chemistry is recommended but not required.

*Messrs. Abeles and Jencks*

### **BIOCHEMISTRY 102a. Immunochemistry**

An introduction to the basic concepts of immunobiology and immunochemistry. Mode and mechanism of antibody synthesis and of antigen-antibody interaction; application of immunochemical methods to the estimation and characterization of proteins, polysaccharides, enzymes and hormones.

*Prerequisite:* Consent of the instructor.

*Mr. Levine*

### **BIOCHEMISTRY 103a. Molecular Biology**

The general principles of molecular biology will be emphasized with respect to nucleic acid biosynthesis, structure, and physiological involvement. In addition, a description of events dealing with control of genetic information will be outlined.

*Mr. Schleif and Staff*

### **BIOCHEMISTRY 104b. Introduction to Physical Biochemistry**

Discussion of physical methods: molecular weight measurements, polyelectrolyte properties, structural and conformational analyses of various spectroscopic and X-ray techniques, macromolecular interactions, magnetic methods.

*Mr. Timasheff and Ms. Lowey*

First year Biochemistry graduate students will take 101, 103a and 104b concurrently.

## Seminars

One or two seminars will be given each semester. Each student will present an oral and written report on one aspect of the following topics:

**BIOCHEMISTRY 216a.** Current Topics in Molecular Biology *Mr. Schleif*

**BIOCHEMISTRY 219b.** Biosynthesis of More or Less Complex Molecules *Mr. Abeles*

**BIOCHEMISTRY 221b.** Metabolic Regulation *Mr. Lowenstein*

**BIOCHEMISTRY 238a.** Advanced Physical Techniques

Three to six lectures on the mathematical treatment of fluctuation phenomena such as rotational diffusion and Brownian motion will be given. Topics to be discussed by participants may include nuclear spin relaxation, optical scattering, statistical analysis of nerve impulses, X-ray scattering, etc.

*Prerequisite:* Calculus and Biochemistry 104 or consent of instructor. *Mr. Redfield*

**BIOCHEMISTRY 401-417.** Biochemical Research Problems

Independent research for the Ph.D. degree.

401. *Mr. Jencks*

402. *Mr. Levine*

404. *Mr. Timasheff*

405. *Mr. Abeles*

406. *Mr. Fasman*

407. *Mr. Lowenstein*

408. *Mr. Grossman*

409. *Ms. Lowey*

410. *Mr. Soodak*

411. *Ms. Van Vunakis*

412. *Mr. Freifelder*

413. *Mr. Hollocher*

414. *Mr. Murakami*

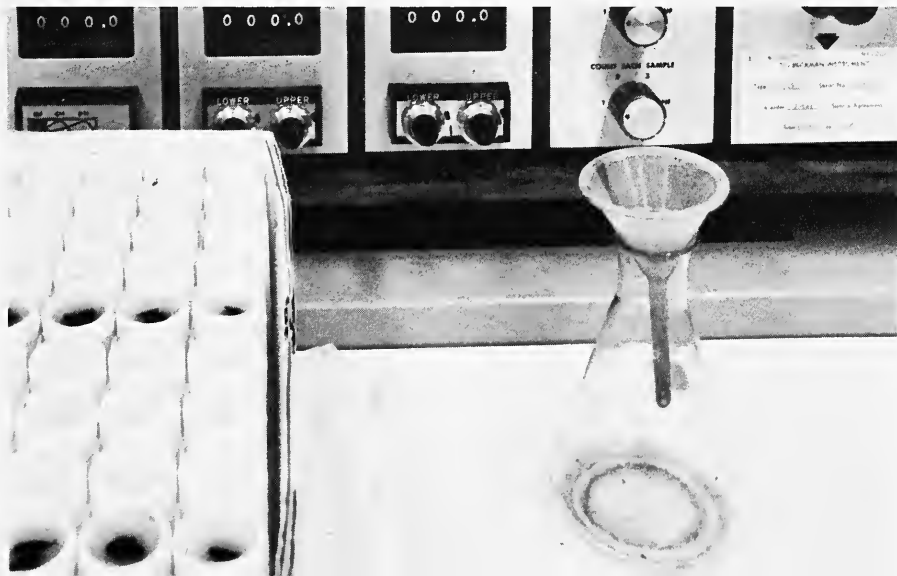
415. *Mr. Schleif*

416. *Mr. Redfield*

417. *Mr. Hong*

## Journal Club, Colloquia, and Research Clubs

In addition to the formal courses announced above, all graduate students are encouraged to participate in the Department's Journal Club and colloquia. The Journal Club is an informal meeting of the students, staff and post-doctoral fellows, at which recent publications are discussed. Colloquia are general meetings of the Department in which both speakers from the Department and guest speakers will present their current investigations. Research clubs are organized by various research groups of the Department.



# BIOLOGY

## Objectives

The graduate program in biology is designed to give students an understanding of the fundamental nature of living processes, and to train them to undertake original research.

The department rarely admits a graduate student who desires a Master's degree. Such candidates may, however, be admitted at the discretion of the faculty as exceptional cases. A Master of Arts degree may be granted on completion of a designated program to be arrived at after consultation with the graduate adviser.

## Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. The student's undergraduate record should ordinarily include courses equivalent to those required of undergraduates concentrating in biology at this institution. These are: general biology, genetics, cell physiology, developmental biology, and at least two additional elective courses. Students who are deficient in some of these subjects, but whose records are otherwise superior, may make up their deficiencies while they are enrolled as graduate students. In exceptional cases, students may be excused from some of these requirements. Students with serious deficiencies must, however, expect to add additional time to their graduate program in order to satisfy the deficiencies.

It is strongly recommended that applicants take the Graduate Record Examination.

On being admitted to the Biology Department, graduate students will report to the temporary graduate student adviser who will assist the student with formal entry into the department and later with their programs.

An important part of graduate training consists of laboratory experience. Since the summer months provide an opportunity for such work, unbroken by courses and other responsibilities, it is customary for graduate students to spend their summers doing research. In recognition of this, the Biology Department provides summer stipends for its full-time graduate students.

## Faculty

Professor JEROME A. SCHIFF, *Acting Chairman*: Plant biochemistry and physiology. Intracellular development. Sulphur metabolism.

Professor CAROLYN COHEN: Structural aspects of contractile systems, cell division, and blood coagulation.

Professor HERMAN T. EPSTEIN: Radiation biology. Virus genetics.

Professor MARTIN GIBBS: Photosynthesis and plant physiology.

Professor HARLYN O. HALVORSON: Developmental genetics and biochemistry.

Professor ALBERT KELNER: Genetics. Microbial genetics. Radiation biology.

Professor ANDREW G. SZENT-GYORGYI: Chemistry of muscle contraction. General physiology.

Associate Professor CHANDLER M. FULTON: Invertebrate development. Cellular differentiation.

Associate Professor ATTILA O. KLEIN: Plant development and metabolism.

Associate Professor GJERDING OLSEN: Animal physiology. Endocrinology.

Associate Professor RAYMOND E. STEPHENS: Chemistry of cell division. Biological motility.

Assistant Professor JAMES E. HABER: Macromolecular synthesis during development.

Assistant Professor JEFFREY C. HALL: Behavioral genetics.

Assistant Professor MARION NESTLE

Assistant Professor MICHAEL ROSBASH: Gene organization and Eukaryotes. Macromolecular synthesis during oögenesis.

Assistant Professor DAN J. STEWART: Developmental genetics.

## Degree Requirements

At least one year of teaching experience is required of all degree candidates.

### Master of Arts

*Program of Study.* The program leading to the M.A. degree in biology focuses primarily on the research capability of the student. Specifically, the primary requirement for the degree is the completion of a thesis based on original laboratory work which is acceptable to the department. In general, the preparation for an original research problem will necessitate the enrollment of a student in course work. The specific number and types of courses will vary, depending on the ultimate research problem, and will be prescribed by the department. The candidate must, however, complete the equivalent of one full year of graduate study at Brandeis University, ordinarily computed at a minimum of twenty-four semester hours of approved study.

By the end of the first year, each graduate student will choose a specific field of interest and will apply to the chairman of the department for a permanent adviser to be assigned by the department. This adviser will serve as the chairman of a committee of at least three departmental staff members, which will advise the student on courses to be taken and guide him or her throughout the thesis problem.

The thesis requirement may be waived under exceptional circumstances and only with the approval of the department staff.

*Language requirement.* All candidates are required to demonstrate a reading knowledge of French, German, or another foreign language acceptable to the department. An examination demonstrating reading ability in the foreign language must be taken prior to the completion of thesis work.

*Qualifying Examination.* At the discretion of the student's advisory committee, a qualifying or comprehensive examination may be required.

### Doctor of Philosophy

*Program of Study.* All students will be expected to obtain a knowledge of the principles and techniques of the areas of genetics, morphology, physiology and development before taking the qualifying examination. The background a student is expected to have in these areas is equivalent to the course contents of Biology 101b, 200a and b, 202a, 204b, and Biochemistry 100a, 101. Entering students will be encouraged to take Biology 300a and b. The student will be expected also to have additional background in his or her area of specialization as well as experience in seminar and research courses to be designated.

Each student will choose his or her specific field of interest and will apply to the chairman of the department for a permanent adviser to be assigned by the department before the end of the second year. The adviser will assist the student in planning a well-balanced program in his or her specific field of interest. In addition, the adviser will ordinarily serve as the chairman of the student's proposition committee, proposition examining committee and dissertation examining committee.

*Language requirement.* A reading knowledge of French, German, or another language acceptable to the department, is required. This requirement must be met before the student completes the first year of graduate study.

*Qualifying Examination.* Ordinarily this examination will be taken on the recommendation of the student's adviser and should be completed before active dissertation work is initiated. The student's major adviser will appoint two other faculty members to serve as the student's proposition committee. The student will submit seven propositions encompassing the four core areas with no more than two propositions in any one area. Each proposition should be a proposal or hypothesis subject to debate. The proper form in which the propositions are to be submitted will be designated by the department. (See department secretary for suggested format and instructions.) The student will be examined orally on at least three of the seven acceptable propositions by the three members of the propositions committee plus two additional faculty members.

*Admission to Candidacy.* To be admitted to candidacy, the student must have (a) passed the foreign language examination, (b) passed the qualifying examination, (c) shown a capacity for independent research, (d) been accepted by a graduate adviser.

*Dissertation and Defense.* Each student will conduct an original investigation. *It is strongly recommended that the dissertation research be deferred until the student has fulfilled requirements for admission to candidacy.* With the approval of the student's adviser, however, research courses may be elected at any time. After admission to candidacy, a dissertation committee will be appointed by the chairman of the department. It will consist of at least three staff members headed by the student's permanent adviser. This committee must approve the candidate's subject of research, will guide his or her research activities toward the doctoral dissertation and, in addition, will read and evaluate the completed dissertation. After submission of the dissertation, the candidate will be expected to present the principal results of his or her work and its significance during an examination in defense of the dissertation.

## Courses of Instruction

### **BIOLOGY 101b. Comparative Physiology of Animals**

An intensive comparison will be presented of the mechanisms which diverse organisms have evolved to deal successfully with similar environmental challenges. Similarities and dissimilarities in the processes operating to regulate metabolism, reproduction, sensitivity and reactivity in animals will be studied.

*Prerequisite:* Biology 41a or the equivalent.

Three classroom and three laboratory hours a week.

Laboratory fee: \$20.

*Mr. Olsen*

### **BIOLOGY 102b. Structural Biology**

Physical principles of biomolecular organization. Image formation: microscopy and X-ray diffraction. Studies of the design and function of muscle, virus particles, membranes and other cellular structures.

Some background in physics and chemistry is desirable. *Ms. Cohen and Mr. Caspar*

### **BIOLOGY 103b. Seminar in Cell Structure and Function**

Molecular architecture of the living cell and its relationship to life processes. The generalized cell, the cell in division, and the specialized cell will be considered from the viewpoint of classical cytology and also in terms of current biomedical, optical, and electron-optical studies.

*Prerequisites:* Biology 30a, 40a.

*Mr. Stephens*

### **BIOLOGY 104a. Molecular and Cellular Basis of Development**

Gene expression and its control in the growth and development of microorganisms and metaphyte-metazoan cells in culture, with emphasis on eucaryotic cells. Programming and phenotypic expression in cell differentiation.

*Prerequisite:* Biology 40a.

*Mr. Fulton*

### **BIOLOGY 105b. Advanced Genetics**

The purpose of this course is to consider topics which are dealt with, or at least mentioned, in introductory genetics, and go into them in depth and detail. There are two basic approaches to the problem areas: cytogenetics, and molecular genetics. Emphasis will be placed on problems currently under investigation.

*Prerequisite:* Biology 20a, 21, or 30a or Biochemistry 20aR.

*Mr. Hall*

### **BIOLOGY 140b. DNA Repair: Its Genetic and Evolutionary Aspects**

A comprehensive review of DNA repair (photoactivation and dark repair) emphasizing its place in biology. Topics included: relation of repair to the origin of life and early evolution of cells; repair considered as a gene stabilizing mechanism; role of ultraviolet light during evolution; natural selection for repair in contemporary life.

*Prerequisite:* Biology 30a or the equivalent; or permission of instructor. *Mr. Kelner*

### **BIOLOGY 245a. Selected Topics in Plant Metabolism**

A discussion of those areas of physiology and biochemistry to which plants lend themselves as experimental objects. Conspicuous examples are photosynthesis, photomorphogenesis, nitrogen fixation, and the biosynthesis of natural products such as anthocyanins, flavonoids, isoprenoids, phenols, terpenes, etc.

Three classroom hours a week.

*Mr. Gibbs*

### **BIOLOGY 245b. Comparative Physiology and Biochemistry of Plants**

(See 245a)

Three classroom hours a week.

*Mr. Schiff*

## **Courses in Research**

### **BIOLOGY 300a and b. Biological Research**

Primarily for the first year student with the purpose of introducing him to biological research and to the work in progress in the laboratories of a number of faculty members. In consultation with the graduate adviser, the student plans a sequence of such tenures, each comprising six weeks or more, and then carries out experimental investigations under the guidance of the faculty members involved. *Staff*

### **BIOLOGY 400. Biophysics of Microorganisms**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Epstein*

### **BIOLOGY 401. Genetics and Microbiology**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Kelner*

### **BIOLOGY 402. Population Genetics and Mathematical Genetics**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Halvorson*

### **BIOLOGY 403. Developmental Genetics**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Stewart*

**BIOLOGY 404. Vertebrate Physiology**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Olsen*

**BIOLOGY 405. Invertebrate Development**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Fulton*

**BIOLOGY 406. Plant Physiology**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Schiff*

**BIOLOGY 407. Structural Aspects of Contractile Systems, Cell Division and Blood Coagulation**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Ms. Cohen*

**BIOLOGY 408. Behavioral Genetics**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Hall*

**\*BIOLOGY 409. Vertebrate Development**

**BIOLOGY 410. Plant Development**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Klein*

**BIOLOGY 411. Cytology**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Stephens*

**BIOLOGY 412. Plant Metabolism**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Gibbs*

**BIOLOGY 413. General Physiology**

Laboratory hours to be arranged.

Laboratory fee: \$25.

*Mr. Szent-Gyorgyi*

**Biology Journal Clubs**

There will be a number of informal Journal Clubs which will deal with various topics of concern to the various specialties. These will meet regularly under the auspices of the staff. Students, depending upon their individual needs, may be required to attend.

\* Not to be given in 1974-75.





# BIOPHYSICS

## Objectives

The interdepartmental graduate program in biophysics, leading to the degree of Doctor of Philosophy, is designed to provide a broad background in the physics and chemistry of living processes and to develop the students' capacity for independent research. The program offers opportunity for study and research in biophysical chemistry, cellular physiology, molecular genetics, photobiology, psychophysics and structural biology. Applicants are expected to have strong backgrounds in physical science, with undergraduate concentrations in biology, chemistry, mathematics, physics or engineering.

## Admission

The general requirements for admission to the Graduate School are given in an earlier section of this catalog. Applications should include, in addition to letters of reference, a personal statement giving reasons for choosing biophysics and indicating areas of interest. Applicants are required to take the Graduate Record Examination and are encouraged to visit Brandeis for interviews, if possible.

## Faculty

Professor HENRY LINSCHITZ (Chemistry), *Chairman*; Professors CAROLYN COHEN (Biology) and SERGE N. TIMASHEFF (Biochemistry); Associate Professor DAVID J. DeROSIER (Physics).

## Degree Requirements

### Doctor of Philosophy

*Program of Study.* Since Biophysics is a very broad field and students may have widely different backgrounds and goals, the course of study is flexible. Courses, seminars and research facilities of the entire School of Science may be used in planning each student's program in accord with his or her individual background and scientific interests. During the first year students take Biophysics 300, a course in which students meet with selected faculty members to explore areas of research.

*Language Requirements.* Reading knowledge of two foreign languages, chosen from French, German and Russian. A knowledge of computer programming may be substituted for the second language.

*Admission to Candidacy.* Students are admitted to candidacy on the basis of academic performance and on a research proposal that they develop and defend. This proposal may be written during the course Biophysics 200b. Students passing this course but not admitted to candidacy may qualify for a master's degree.

*Dissertation and Defense.* Each doctoral candidate will submit a dissertation describing his research and will be required to defend it in a Final Oral Examination.

## Courses of Instruction

### BIOPHYSICS 200b. Seminar in Biophysical Research

A required seminar for Biophysics majors which will deal with current biophysical research. Emphasis is on the understanding, critical evaluation and use of scientific literature. Students will discuss topics from the areas of biophysical chemistry, cellular physiology, molecular genetics, photobiology, psychophysics

and structural biology, based on the reading of significant articles. In consultation with the faculty, each student will develop a research proposition based on independent reading and will prepare a research plan in the form of a thesis proposal.  
*Staff*

### **BIOPHYSICS 300. Introduction to Research in Biophysics**

Students participate for a number of weeks in the research groups of five or six faculty members selected according to the student's interest from the departments of biochemistry, biology, chemistry and physics.  
*Staff*

### **BIOPHYSICS 102b. Structural Biology**

See Biology 102b for description.

### **BIOPHYSICS 104b. Introduction to Physical Biochemistry**

See Biochemistry 104b for description.

*Mr. Timasheff and Ms. Lowey*

## **CAMBRIDGE HUMANITIES SEMINAR**

The Cambridge Humanities Seminar is a collaborative effort of universities in the Boston-Cambridge area to enrich and diversify their interdisciplinary offerings in the humanities at an advanced level. The program is centered at Massachusetts Institute of Technology and offers a concentration to students in the humanities at participating universities during the last two years of undergraduate and the first two years of graduate work in an area of scholarship periodically determined by its membership. The program currently involves faculty in literature, history, philosophy, anthropology, music and fine arts. Its current subject is the idea of the past as it plays a role in the study of various cultural activities.

Graduate students at Brandeis University are welcome to attend. Course enrollment is limited. For further information contact the Brandeis University Graduate School Registrar.

Courses to be offered during the 1974-75 academic year are:

#### **Fall Term:**

#### **CHS. Utopian Fiction**

A study of the utopian imagination since the Renaissance—its emergence as a mode distinct from satire and pastoral, its influence by changing notions of reasonableness, its relation to the idea of social progress.

To be given at M.I.T.

*Mr. A. C. Kibel, M.I.T.*

#### **CHS. Concepts of Love in the Western World**

This course draws upon material in philosophy, literature, history and several of the life sciences. It studies the development of various western concepts about love, sexuality, and erotic bonding. Readings from contemporary sources as well as major texts in the history of ideas.

To be given at M.I.T.

*Mr. I. Singer, M.I.T.*

## Spring Term:

### CHS. Fathers and Sons

Study of modern generational change and conflict, centering on fathers and sons (and mothers and daughters where appropriate) are viewed in literature, psychology and history, and historical data on family changes in the last two hundred years. Attempted synthesis of viewpoints. Students will be expected to deal with personal experiences, or historical research, or a synthesis thereof.

Given at M.I.T.

*Mr. B. Mazlish, M.I.T.*

### CHS. Classic to Romantic: Blake

Examination of transition from classic to romantic modes in English poetry, focusing on Blake as exemplary figure. Significance of revolutionary awareness in art compared with sense of new epoch in political life.

Given at Wellesley.

*Mr. A. Gold, Wellesley*

## CHEMISTRY

### Objectives

The graduate program in chemistry, comprising course work, seminar participation, and research, is designed to lead to a broad understanding of the subject. The graduate program leads to the M.A. and Ph.D. degrees in chemistry. The Ph.D. is offered with specializations in inorganic, organic, physical and physical-organic chemistry and in chemical-physics. (Detailed information on the interdisciplinary specialization in chemical physics is found on page 70.) All students will be required to demonstrate knowledge in advanced areas of inorganic, organic and physical chemistry. The doctoral program is designed to be flexible so that individual programs of study may be devised to satisfy the particular interests and needs of each student. In each case this program will be decided by joint consultation between the student and the Departmental Committee of Graduate Studies and the thesis supervisor when selected. The doctoral program will normally include a basic set of courses in the student's own area of interest, this to be supplemented by advanced courses in chemistry and, where appropriate, in biochemistry, biology, mathematics and physics.

### Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. In addition, the undergraduate curriculum of applicants should include courses in physics and mathematics (differential and integral calculus), and courses in general and inorganic, analytical, organic and physical chemistry.

Admission to advanced courses will be based upon results of a qualifying examination in each of these areas of chemistry, which will be taken upon entrance. These examinations will determine if the student shall be required to make up deficiencies in preparation. The results of the qualifying examinations will be considered in the assignment of awards for the subsequent years of graduate study and in determining a student's eligibility to continue in a degree program.

## Faculty

Professor KENNETH KUSTIN, *Chairman*: Study of fast reactions in solution by relaxation techniques; mechanisms of inorganic reactions; bioinorganic chemistry.

University Professor SAUL G. COHEN: Chemistry of free radicals; organic photochemistry; specificity and mechanism of reactions of enzymes.

†Professor PAUL B. DORAIN: Electron paramagnetic resonance; exchange interactions and optical spectra of crystalline materials.

†Professor SIDNEY GOLDEN: Quantum theory of chemical kinetics; many body problems and atomic and molecular structure; statistical mechanics of ion solvation; physical chemistry of metal-ammonia solutions; quantum statistical inequalities.

Professor ERNEST GRUNWALD: Solution chemistry; kinetics of proton transfer reactions; lifetimes of hydrogen-bonded complexes in solution; electric dipole moments of ion pairs; mechanism of combustion.

†Professor JAMES B. HENDRICKSON: Synthesis of natural products; stereochemistry and molecular geometry; synthesis design systematics and development of new synthetic reactions.

Professor HENRY LINSCHITZ: Reactions of excited molecules; stabilization of free radicals; photo-ionization in solution and properties of solvated electrons; metal complexes; physical mechanisms of photobiological processes.

Professor MYRON ROSENBLUM: Reaction mechanisms; molecular rearrangements; organometallic chemistry of the transition elements.

Professor ROBERT STEVENSON: Isolation and structure of natural products; lignan synthesis; molecular rearrangements in triterpenoids and steroids.

Visiting Professor ANDREW D. McLACHLAN, MRC Laboratory of Molecular Biology, University Postgraduate Medical School, Cambridge, England.

Visiting Professor S. I. WEISSMAN, Department of Chemistry, Washington University, St. Louis, Missouri.

Associate Professor MICHAEL J. HENCHMAN: Gas kinetics under "single collision" conditions; dynamics of molecular collision processes.

Associate Professor PETER C. JORDAN: Statistical mechanical theory of cooperative phenomena; non-equilibrium statistical mechanics and thermodynamics; applications of quantum mechanics to molecular spectroscopy.

Associate Professor COLIN STEEL: Chemistry of excited molecules and radicals; the kinetics and mechanisms of photochemical and thermal reactions.

Associate Professor THOMAS R. TUTTLE JR.: Chemistry of liquid solutions; the composition and structures of species in metal solutions in polar solvents; application of spectroscopy, e.g., magnetic resonance, optical and spectropolarimetry, to elucidation of the composition and structure of solutions.

Assistant Professor IU-YAM CHAN: Phosphorescent triplet state of organic molecules; biological polymers; inorganic paramagnetic centers in crystals.

Assistant Professor IRVING R. EPSTEIN: Use of quantum mechanics to elucidate molecular properties; chemistry of electron-deficient compounds; theoretical approaches to Compton scattering, photochemistry, and oscillating chemical reactions.

Assistant Professor BRUCE M. FOXMAN: X-ray structure determination; chemical, physical and crystallographic studies of solid-state reactions.

Assistant Professor PHILIP M. KEEHN: Structurally interesting molecules; photo-oxidation and photochemistry; new methods in organic synthesis.

† On leave, 1974-75.

Assistant Professor RONALD J. PARRY: Biosynthesis of natural products; stereochemical aspects of enzyme mechanisms.

## Degree Requirements

Detailed information on the interdisciplinary specialization in chemical physics is found on page 70.

Entering students may be admitted to either the Master's or the Doctoral program.

All candidates for advanced degrees are required to meet the following requirements:

*Qualifying Examination.* These examinations are set twice a year, in September and January, and are based on the undergraduate chemistry curriculum. Students are required to take and are expected to pass qualifying examinations in organic, inorganic-analytical and physical chemistry during their first year.

Recommendations with respect to the first-year course of study will be based on the performance on the qualifying examinations. Admission to the graduate degree programs will be based on the student's record in course work during the first year and the performance on the qualifying examinations.

*Language Requirements.* Each student is obliged to demonstrate a useful reading knowledge of scientific German within the first two years of residence.

*Seminar.* Each student in residence is required to attend and participate in the seminar in his or her chosen area of concentration throughout the period of graduate study.

*Teaching.* It is expected that all graduate students will do some undergraduate teaching during the course of their studies.

## Master of Arts

*Program of Study.* Each candidate is required to complete successfully one year of study at the graduate level in chemistry, or, with prior permission of the Departmental Graduate Studies Committee, in related fields. The program will include laboratory work and, normally, six semester courses at the graduate level. The detailed program of study will be one jointly arrived at by the candidate and the Graduate Studies Committee to reflect the candidate's area of interest as well as a perspective of other areas.

*Residence Requirements.* The minimum residence requirement for the M.A. degree is one year.

## Doctor of Philosophy

*Program of Study.* A balanced program of study will be prepared jointly by the student and the Departmental Graduate Studies Committee. This will normally include a basic core of course work in the student's area of interest and later more specialized courses appropriate to it. It is expected that doctoral students will choose a research adviser during the first year, normally in the second semester. A student who satisfactorily completes the first year of study in the Doctoral program qualifies for the Master's degree.

*Admission to Candidacy.* A student is recommended for admission to candidacy for the doctoral degree upon certification by his or her thesis adviser and the Graduate Studies Committee that the student has passed the qualifying and language examinations and has made satisfactory progress in the program of study and the final Ph.D. examinations.

*Final Examinations.* The graduate student must demonstrate proficiency by taking final examinations in his or her major field, organic, physical-organic, physical, or inorganic chemistry. In organic chemistry, students are required to pass eight cumula-

tive examinations, given monthly on unannounced topics. Students normally begin these examinations after they begin research and are expected to maintain reasonable progress toward completion. In physical-organic chemistry, final examinations are administered twice a year and are based on assigned readings. Students must pass three of these examinations and must maintain satisfactory progress toward this end. In physical chemistry and inorganic chemistry, generally during the third semester of graduate work, the student is assigned a set of propositions. In physical chemistry the set consists of three propositions; the student takes a written examination on one proposition and is examined orally on the remaining two. In inorganic chemistry the student is assigned two propositions; he or she takes a written examination on one proposition, and is examined orally on his or her proposed research project and the remaining proposition.

*Residence Requirements.* The minimum residence requirement for the Ph.D. degree is two years.

*Dissertation and Defense.* A dissertation is required which describes the results of an original investigation and which demonstrates the competence of the candidate in independent investigation, critical ability and effectiveness of expression. An oral defense of the dissertation will be held.

## Courses of Instruction

### CHEMISTRY 110b: Instrumental Chemical Analysis

Application of modern methods of instrumental chemical analysis to problems of theoretical and practical interest.

*Prerequisite:* Satisfactory grade in an undergraduate course in physical chemistry.

Two lectures and six laboratory hours a week.

*Mr. Steel*

### CHEMISTRY 121a. Inorganic Chemistry I, Lectures

Introduction to the principles of chemical binding; valence theory, periodic properties, molecular structures. Application chiefly to the chemistry of the lighter and non-metallic elements.

*Prerequisite:* Satisfactory grade in an undergraduate course in physical chemistry.

Three lecture hours a week.

*Mr. Foxman*

### \*CHEMISTRY 122b. Inorganic Chemistry II, Lectures

*Prerequisite:* Chemistry 121a or the equivalent.

### \*CHEMISTRY 123b. Nuclear Chemistry

### CHEMISTRY 129a. Inorganic Chemistry Laboratory

Inorganic synthesis and analysis; modern synthetic techniques and instrumental analysis.

*Corequisite:* Chemistry 121a.

Two afternoons of laboratory a week.

*Mr. Foxman*

### CHEMISTRY 130a. Advanced Organic Chemistry: Structure

Introduction to group theory and its application to molecular orbital theory and spectroscopy.

*Mr. Rosenblum*

### \*CHEMISTRY 131a. Advanced Organic Chemistry: Topics in Structure and Reactivity

\* Not to be given in 1974-75.

**CHEMISTRY 132b. Advanced Organic Chemistry: Spectroscopy**

Application of physical and spectroscopic methods to the elucidation of structure and stereochemistry of organic compounds.

*Prerequisite:* Satisfactory grade in Chemistry 130a or permission of instructor.

*Mr. Keehn*

**CHEMISTRY 133bR. Advanced Organic Chemistry: Mechanisms**

Kinetics, stereochemistry and mechanisms of selected organic reactions.

*Prerequisites:* Satisfactory grade in undergraduate courses in organic and physical chemistry.

*Mr. Cohen*

**\*CHEMISTRY 134b. Advanced Organic Chemistry: Synthesis**

**CHEMISTRY 141a and b. Advanced Physical Chemistry I**

Classical, statistical, irreversible thermodynamics and chemical kinetics. Properties of real systems: gases, phase stability, chemical equilibrium and solutions. Statistical equilibrium, ensembles and fluctuations. Entropy production, reciprocal relations, microscopic reversibility and regression of fluctuations. Rate laws and approach to equilibrium; scattering and energy transfer. Gas and solution kinetics. Surface reactions.

*Prerequisite:* Satisfactory grade in an undergraduate course in physical chemistry.

*Mr. Henchman, 1st sem.*

*Mr. Kustin, 2nd sem.*

**CHEMISTRY 142b. Advanced Physical Chemistry II**

Quantum mechanics: waves and wave packets, operator methods, Schrodinger's equation, simple model systems, angular momenta, perturbation theory and variational principle.

*Prerequisite:* Satisfactory grade in an undergraduate course in physical chemistry.

*Mr. Linschitz*

**CHEMISTRY 143a. Advanced Physical Chemistry II**

A continuation of Chemistry 142b. Quantum chemistry: spin, atomic and molecular structure, spectroscopy, chemical binding, advanced topics.

*Prerequisite:* Satisfactory grade in Chemistry 142b or the equivalent.

*Mr. Jordan*

**CHEMISTRY 144a. Structure and Spectroscopy**

Interaction of radiation with matter and its relevance to molecular structure. Topics will be selected from: X-ray and electron diffraction; microwave, nmr, infra-red, visible and ultraviolet absorption; molecular beam and mass spectrometry.

*Prerequisite:* Satisfactory grade in an undergraduate course in physical chemistry.

*Mr. Tuttle*

**BIOCHEMISTRY 100a and 100aR. Introductory Biochemistry**

See Biochemistry 100a for description.

*Messrs. Abeles and Jencks, 1st sem.*

*Mr. Hollocher, 2nd sem.*

**CHEMISTRY 200. Advanced Chemistry Laboratory**

*Staff*

**CHEMISTRY 220c. Inorganic Chemistry Seminar**

Required of graduate students in inorganic chemistry, who must audit this course each year.

*Mr. Foxman*

**\*CHEMISTRY 221a. Advanced Inorganic Chemistry I**

**\*CHEMISTRY 222b. Advanced Inorganic Chemistry II**

\* Not to be given in 1974-75.

**\*CHEMISTRY 229b. Special Topics in Inorganic Chemistry**

**CHEMISTRY 231c. Organic Chemistry Seminar**

Required of graduate students in organic chemistry, who must audit this course each year.

*Messrs. Rosenblum and Stevenson, 1st sem.*

*Messrs. Keehn and Parry, 2nd sem.*

**\*CHEMISTRY 232b. Chemistry of Heterocyclic Compounds**

*Prerequisite:* Satisfactory grade in Chemistry 131 or the equivalent.

**CHEMISTRY 233b. The Biosynthesis of Natural Products**

An introduction to the experimental investigation of natural product biosynthesis via radio tracer techniques; a discussion of current knowledge regarding the biosynthesis of alkaloids, terpenes, and acetogenins.

*Mr. Parry*

**\*CHEMISTRY 234b. Chemistry of Organometallic Compounds**

*Prerequisite:* Chemistry 130a or the equivalent.

**CHEMISTRY 235a. Special Topics in Organic Chemistry**

A selected group of organic natural products will be surveyed with particular reference to biogenesis, structural relationship, stereochemical configuration, synthesis and structure elucidation by spectroscopic methods.

*Mr. Stevenson*

**\*CHEMISTRY 235b. Special Topics in Organic Chemistry**

**\*CHEMISTRY 237b. The Chemistry of Natural Products**

**CHEMISTRY 240c. Physical-Organic Chemistry Seminar**

Required of graduate students in physical-organic chemistry, who must audit this course each year.

*Messrs. Cohen and Steel, 1st sem.*

*Mr. Grunwald, 2nd sem.*

**CHEMISTRY 241c. Physical Chemistry Seminar**

Required of graduate students in physical chemistry, who must audit this course each year.

*Messrs. Henchman and Jordan, 1st sem.*

*Messrs. Chan and Epstein, 2nd sem.*

**\*CHEMISTRY 243a. Statistical Thermodynamics**

**CHEMISTRY 244a. Special Topics in Physical Chemistry: Combustion and Flames**

Physical and chemical dynamics of flames, with special emphasis on chemical reaction mechanisms.

*Prerequisite:* Chemistry 142b or the equivalent.

*Mr. Grunwald*

**CHEMISTRY 244b. Special Topics in Physical Chemistry: Collision Molecular Excitons Processes**

Molecular crystalline states; Davydov splitting; selection and polarization rules; absorption spectra of pure and mixed crystals; triplet excitons; crystalline emission; interaction of phonons and excitons.

*Prerequisite:* Chemistry 142b or the equivalent.

*Mr. Chan*

**\*CHEMISTRY 245a. Physical Organic Chemistry**

**\*CHEMISTRY 248a. Advanced Quantum Chemistry**

*Prerequisite:* Chemistry 142 or the equivalent.

**CHEMISTRY 250c. Chemical Physics Seminar**

Required of graduate students in chemical physics who must audit this course each year.

*Staff*

\* Not to be given in 1974-75.



## CHEMISTRY COLLOQUIUM

Lectures by faculty and invited speakers. Required of all graduate students.  
*Non-credit.*

### Courses in Research

#### CHEMISTRY 400. Organic Chemistry and Physical Organic Chemistry

Reaction mechanisms; photochemistry; enzyme reactions; free radicals; radiation chemistry. *Mr. Cohen*

#### CHEMISTRY 401. Organic Chemistry

Chemistry of natural products; steroids, triterpenoids, lignans. *Mr. Stevenson*

#### \*CHEMISTRY 402. Organic Chemistry

#### CHEMISTRY 403. Organic Chemistry

Non-benzenoid aromatics: molecular rearrangements; reaction mechanisms; organometallic reagents in organic synthesis. *Mr. Rosenblum*

#### CHEMISTRY 404. Organic Chemistry

Synthesis of natural products; stereochemistry and molecular geometry; development of new synthetic reactions. *Mr. Hendrickson*

#### CHEMISTRY 405. Physical Chemistry

Chemical kinetics of elementary reactions; statistical theory of atomic and molecular structure; statistical mechanics of electrolytic solutions; physical chemistry of metal-ammonia solutions; quantum statistical inequalities. *Mr. Golden*

#### CHEMISTRY 406. Physical Chemistry

Reactions of excited molecules; luminescence; electron solvation; metal complexes; physical mechanisms of photobiological processes. *Mr. Linschitz*

#### CHEMISTRY 407. Physical and Inorganic Chemistry

Electron paramagnetic resonance; optical spectra; solid state chemistry. *Mr. Dorain*

#### CHEMISTRY 408. Physical Chemistry

Faraday effect of small ions in solution. The study of chemical equilibria and processes by means of magnetic resonance spectroscopy. Optical spectra of metal solutions in polar solvents. *Mr. Tuttle*

#### CHEMISTRY 409. Inorganic Chemistry

Kinetics and mechanisms of inorganic reactions; experimental study of fast reactions by the temperature-jump and other relaxation techniques; trace metals in marine organisms. *Mr. Kustin*

#### \*CHEMISTRY 410. Physical and Inorganic Chemistry

#### CHEMISTRY 411. Physical Chemistry

Chemistry of excited molecules and radicals; the kinetics and mechanisms of photochemical and thermal reactions. *Mr. Steel*

#### CHEMISTRY 412. Physical and Physical Organic Chemistry

Solution chemistry; kinetics of proton transfer reactions; lifetimes of hydrogen-bonded complexes in solution; electric dipole moments of ion pairs; mechanism of combustion. *Mr. Grunwald*

\* Not to be given in 1974-75.

**CHEMISTRY 413. Physical Chemistry**

Theory of fluids; theory of non-equilibrium processes; properties of ferrofluids; analysis of molecular spectra. *Mr. Jordan*

**CHEMISTRY 414. Physical Chemistry**

Cross-sections, dynamics and lifetimes of ion-neutral collision processes in the gas phase using beam techniques; charge transfer; elastic and inelastic scattering. *Mr. Henchman*

**CHEMISTRY 415. Physical Chemistry**

Quantum mechanical calculations of molecular properties; molecular momentum distributions; Compton scattering and X-ray diffraction; chemistry of boron hydrides and carboranes; photochemistry. *Mr. Epstein*

**CHEMISTRY 416. Physical Chemistry**

Application of magnetic resonance and/or optical methods to the investigations of:  $\pi$ -electron systems in molecular crystals, molecules of biochemical interest, ions and co-valent complexes containing paramagnetic centers. *Mr. Chan*

**CHEMISTRY 417. Organic Chemistry**

Organic synthesis of strained ring and theoretically interesting molecules. Application of nuclear magnetic resonance spectroscopy to organic systems. *Mr. Keehn*

**CHEMISTRY 418. Organic Chemistry**

Studies of natural product biosynthesis and of the stereochemistry of enzyme mechanisms; radioactive tracers. *Mr. Parry*

**CHEMISTRY 419. Inorganic Chemistry**

X-ray structure determination; reactions in crystals; kinetics, mechanisms, and crystallography of rearrangement, polymerization, and decomposition reactions in the solid-state. *Mr. Foxman*

**Ph.D. in Chemistry with Specialization in Chemical Physics**

The graduate program in chemical physics is an interdisciplinary specialization designed to meet the needs of students who wish to prepare themselves for the study of scientific problems using the methods and theories of modern physics and physical chemistry. This objective is attained by (1) formal course work in chemistry, physics and, possibly, mathematics; (2) participation in relevant graduate seminars; (3) a program of supervised research involving chemical physics; (4) independent study.

The program is designed to be flexible in providing individual programs of study to satisfy the particular interests and needs of each student. Final programs of study and research will be jointly arrived at by the student, his or her research supervisor and the Chemical Physics Committee. Only candidates for the Ph.D. will be accepted.

**Admission**

The general requirements for admission to the Graduate School apply to candidates for admission to the graduate program in chemical physics. Applicants should have a strong undergraduate background in chemistry, physics and mathematics.

**Degree Requirements**

All candidates for the Ph.D. degree in Chemistry with specialization in chemical physics must meet the following requirements:

*Qualifying Examinations.* Each student is expected to demonstrate a satisfactory knowledge of undergraduate chemistry, physics and mathematics by the performance

in three qualifying examinations; one each in physical chemistry, organic or inorganic/analytical chemistry and physics/mathematics. These examinations are set two times a year, in September and January. Results of these examinations will be used as an aid in constructing the student's initial program of course work and will be considered by the Chemical Physics Committee in evaluating the student's progress.

*Language Requirements.* Each student is required to demonstrate a useful reading knowledge of scientific German within the first two years of residence.

*Seminar.* Each student in residence is required to attend and to participate in the Chemical Physics Seminar. Participation in other seminars in physics and chemistry is also recommended.

*Teaching.* It is expected that all graduate students will do some undergraduate teaching during the course of their studies.

### **Master of Arts**

No master's degree is offered with specialization in chemical physics, but students who satisfy the appropriate requirements will be eligible for the M.A. degree in chemistry.

### **Doctor of Philosophy**

*Program of Study.* It is expected that some candidates for the Ph.D. degree in chemistry with specialization in chemical physics may require a longer period of time in course work than will students in either of the fields of physics or chemistry. In general, the program for the Ph.D. in chemistry with specialization in chemical physics will include eight semester graduate courses: four in physical chemistry, one in either organic or inorganic chemistry and three in physics. No specific course work in mathematics is required, but students are expected to be familiar with the techniques necessary for the proper pursuit of their research. In addition, each student is expected to demonstrate a knowledge of elementary computer programming.

Students may satisfy their program's course requirements in part or in entirety by passing (or giving evidence of ability to pass) the final examination in the appropriate number of such courses. Courses in areas related to chemistry and physics may also be considered by the Chemical Physics Committee in partial fulfillment of the requirements.

*Admission to Candidacy.* Students are recommended for admission to candidacy for the doctoral degree upon certification by their thesis adviser and the Chemical Physics Committee that they have passed the qualifying and language examinations and have made satisfactory progress in the program of study and the final Ph.D. examination.

*Final Examinations.* Final examinations in chemical physics are generally taken during the third semester of graduate work. The student is assigned a set of three propositions; the student takes a written examination on one proposition and is examined orally on the remaining two.

*Residence Requirements.* The minimum residence requirement for the Ph.D. degree is two years.

*Dissertation and Defense.* A dissertation is required which describes the results of an original investigation and which demonstrates the competence of the candidate in independent investigation, critical ability and effectiveness of expression. An oral defense of the dissertation will be held.

## **CLASSICS**

See Joint Program of Literary Studies (page 94).

# COMPARATIVE HISTORY

## Objectives

The graduate program in comparative history, leading to the degree of Doctor of Philosophy in History, has been designed to train students in the comparative approach, which is the essence of the best historical scholarship. Comparative history is the conceptualization and study of the past according to political, social, economic, cultural and psychological categories that transcend traditional period and national divisions.

These define its range of possibilities, and provide a framework of reference for it within which unsuspected facts and connections emerge and the exceptional can be distinguished from the commonplace. Every historical study is necessarily comparative in that its specific subject (that particular peasant revolt, or religious revival, or decline in mortality) can be grasped only as it seems to be following a regular or irregular course of development. Our program attempts to impart this understanding directly and to make the comparative approach an explicit and systematic part of professional training, open to all five continents and all historic time.

A small select student body will work in close cooperation with the faculty. All teaching will be done in small seminars and tutorials. Individual programs of study will be developed from the beginning of the students' graduate work in comparative history to prepare them for their qualifying examination and to guide them toward their dissertation research.

The program will concentrate on the comparative history of Western Europe, but students will be strongly encouraged to examine the patterns of European history in comparison with those of American civilization, Eastern Europe, Latin America, Africa and the Near and Far East.

Students in the program will be trained in two fields: one a very broad chronological field, the other a topical or category field. The three chronological fields or periods are: (1) medieval Europe 300-1500, (2) early modern 1400-1815, (3) modern Europe 1750-present. Students will elect one of these periods and will be allowed to concentrate on more narrowly defined eras and areas within the chosen field.

The student will choose, under guidance, a category of comparative historical inquiry and will be required to study it throughout the whole of European history and, within practical limits, in other civilizations.

It is expected that the doctorate will be earned within four years from entering the program. The maximum time allowed will be six years.

## Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply to candidates for admission to this program. Only doctoral candidates will be accepted. Students who have had a sound preparation in history and the social sciences and who have demonstrated unusual imagination and critical insight will receive special consideration. Undergraduate majors in the social sciences or in comparative literature may also apply. Applicants should submit a sample of written work, preferably in European history.

## Faculty

Assistant Professor GERALD L. SOLIDAY, *Chairman*: Early modern history. Social and political institutions.

Professor GEOFFREY BARRACLOUGH: Modern and contemporary history. Political institutions. Historiography.

Professor DAVID S. BERKOWITZ: Early modern history. Bibliography, humanism, the Reformation, and political thought.

††Professor RUDOLPH BINION: Modern history. Culture and thought. Psychohistory. Political and social thought.

Professor EUGENE C. BLACK: Modern history. Political and social institutions.

†††Professor JOHN P. DEMOS: Early modern history. Social institutions.

†††Professor DAVID H. FISCHER: Modern history. Social institutions.

†Professor MILTON I. VANGER: Modern Latin American history. Political institutions.

†††Associate Professor ANGELIKI LAIOU: Medieval history. The Byzantine Empire. Political and social institutions.

††Associate Professor JOHN E. SCHRECKER: Modern Asian history. Nationalism. Imperialism.

†Assistant Professor GREGORY L. FREEZE: Modern history. Eastern Europe. Political and social institutions.

Assistant Professor GERALD N. IZENBERG: Modern history. Culture and thought.

Instructor ALAN COES: Latin American history.

## Degree Requirements

### Master of Arts

An M.A. degree in History will be awarded to those students who have satisfactorily completed one year of residence at full time, fulfilled the language requirement and have passed a qualifying examination at the Master's level.

### Doctor of Philosophy

Each student will be assigned to a member of the faculty who will be a period supervisor. In addition, students will work independently with other assigned faculty members who will help define the category field.

*Program of Study.* During the first two years in the program, students will take four courses each term, divided between seminars and supervised independent study or reading courses.

The third year in the program will, when feasible, be spent abroad pursuing research for the dissertation. Arrangements will be made for conferences with foreign scholars who can advise on the subject of the research.

*Language Requirement.* The use of foreign languages is an essential tool for the comparative historian. Each student will be expected to pass at least one language examination upon admission, the second one by the end of the second semester. Language requirements are:

Medieval: French, German, Latin

Early Modern and Modern: French and German

Students with any language deficiency must remedy it during the summer prior to admission. The Latin examination will presume the equivalent of two years of college work; French and German require a capacity to read standard historical prose.

† On leave, 1974-75.

†† On leave, Fall Term, 1974-75.

††† On leave, Spring Term, 1974-75.

**Qualifying Examination.** The student is expected to take the qualifying examination at the end of the second year of study and will be examined on his or her period, and category field. Any student who has not completed the qualifying examination by the sixth semester will be dropped from the program.

**Admission to Candidacy.** A student may be admitted to candidacy for the Ph.D. degree when he or she has completed course and residence requirements, has demonstrated proficiency in the required foreign languages, has passed the qualifying examination and has gained approval of his or her dissertation topic by the faculty of the program.

**Dissertation and Defense.** The student will normally define a dissertation topic in the term preceding the qualifying examination but in no case later than the end of the fifth semester in the program. When the completed dissertation has been accepted by the student's dissertation committee, the candidate will defend it at a final oral examination.

## Courses of Instruction

### Seminars

#### COMPARATIVE HISTORY 201a. Introduction to Comparative History

Introduction to the methods, concepts and literature of comparative history and the professional study of history in general.

*Required for all first year students.*

*Staff*

#### COMPARATIVE HISTORY 202a. Topics in Comparative History

*Required for all first year students.*

*Staff*

#### COMPARATIVE HISTORY 202b. Topics in Comparative History

*Required for all first year students.*

*Staff*

#### COMPARATIVE HISTORY 205a. Historiography

An examination of major recent trends in world historiography. *Mr. Barraclough*

#### COMPARATIVE HISTORY 301a and b—312a and b. Research papers

301a and b.	<i>Mr. Barraclough</i>	*307a and b.	
302a and b.	<i>Mr. Berkowitz</i>	308a and b.	<i>Mr. Izenberg</i>
303b.	<i>Mr. Binion</i>	309a.	<i>Ms. Laiou</i>
304a and b.	<i>Mr. Black</i>	310b.	<i>Mr. Schrecker</i>
305a.	<i>Mr. Demos</i>	311a and b.	<i>Mr. Soliday</i>
306a.	<i>Mr. Fischer</i>	*312a and b.	

#### COMPARATIVE HISTORY 321a and b—332a and b. Period Field Reading

321a and b.	<i>Mr. Barraclough</i>	*327a and b.	
322a and b.	<i>Mr. Berkowitz</i>	328a and b.	<i>Mr. Izenberg</i>
323b.	<i>Mr. Binion</i>	329a.	<i>Ms. Laiou</i>
324a and b.	<i>Mr. Black</i>	330b.	<i>Mr. Schrecker</i>
325a.	<i>Mr. Demos</i>	331a and b.	<i>Mr. Soliday</i>
326a.	<i>Mr. Fischer</i>	*332a and b.	

#### COMPARATIVE HISTORY 341a and b—352a and b. Category Field Reading

341a and b.	<i>Mr. Barraclough</i>	*347a and b.	
342a and b.	<i>Mr. Berkowitz</i>	348a and b.	<i>Mr. Izenberg</i>
343b.	<i>Mr. Binion</i>	349a.	<i>Ms. Laiou</i>
344a and b.	<i>Mr. Black</i>	350b.	<i>Mr. Schrecker</i>
345a.	<i>Mr. Demos</i>	351a and b.	<i>Mr. Soliday</i>
346a.	<i>Mr. Fischer</i>	*352a and b.	

**COMPARATIVE HISTORY 401—412. Dissertation Research**

401. Mr. Barraclough  
402. Mr. Berkowitz  
403. Mr. Binion  
404. Mr. Black  
405. Mr. Demos  
406. Mr. Fischer

407. Mr. Freeze  
408. Mr. Izenberg  
409. Ms. Laiou  
410. Mr. Schrecker  
411. Mr. Soliday  
412. Mr. Vanger

**COMPARATIVE HISTORY 500. Registration in Time**

In addition, the following courses may be taken as equivalent to Comparative History seminars.

- HISTORY 110a. The Civilization of the Early Middle Ages** *Ms. Laiou and Staff*  
**HISTORY 110b. The Civilization of the High and Late Middle Ages** *Staff*  
**HISTORY 111a. Byzantine Civilization** *Ms. Laiou*  
**\*HISTORY 112b. The Crusades**  
**HISTORY 120a. Senior Seminar in Medieval Studies** *Ms. Laiou and Staff*  
**HISTORY 121a. Humanism in Europe** *Mr. Berkowitz*  
**\*HISTORY 122a. Modern Despotism: Theory and Practice**  
**\*HISTORY 123a. The Renaissance**  
**HISTORY 123b. The Reformation** *Mr. Berkowitz*  
**HISTORY 124b. Topics in Historical Jurisprudence: The English System of Law** *Mr. Berkowitz*  
**\*HISTORY 125a. The Ancient Regime**  
**HISTORY 126a. Revolts and Revolutions in Seventeenth-Century Europe** *Mr. Soliday*  
**\*HISTORY 126b. Seventeenth Century Revolution**  
**HISTORY 127b. The Society of the Old Regime (Seminar)** *Mr. Soliday*  
**HISTORY 128aR. The Development of the European City to 1800 (Seminar)** *Mr. Soliday*  
**HISTORY 130a. The French Revolution** *Mr. Black*  
**HISTORY 131b. Topics in Modern Social History** *Mr. Black*  
**HISTORY 132a. Intellectual History of Modern Europe, 1890-1930** *Mr. Izenberg*  
**HISTORY 132b. Intellectual History of Contemporary Europe, 1930-1970** *Mr. Izenberg*  
**\*HISTORY 133a. European Intellectual History, 1789-1890**  
**\*HISTORY 134a. Modern Europe: A Biographical Approach**  
**HISTORY 135aR. European Socialism Since Babeuf** *Mr. Binion*  
**HISTORY 136a. Europe in the Age of Nationalism and Imperialism, 1870-1920** *Mr. Barraclough*

\* Not to be given in 1974-75.

- HISTORY 136b. The World Since 1929 *Mr. Barraclough*
- \*HISTORY 137b. Imperialism
- \*HISTORY 140b. The Tudor Revolution
- \*HISTORY 141b. Studies in British History - 1851 to the Present
- \*HISTORY 142b. The Spanish Civil War (Seminar)
- \*HISTORY 144b. France 1914-1940 (Seminar)
- HISTORY 146b. Topics in German History: Hitler, Germany and Europe (1933-1945)  
*Mr. Binion*
- \*HISTORY 147a. Rise of Imperial Russia
- \*HISTORY 148bR. Revolutionary Russia, 1890-1917
- \*HISTORY 149b. Culture and Thought in Imperial Russia, 1830-1880
- HISTORY 150a. Colonial America: People, Culture and Society *Mr. Demos*
- \*HISTORY 150b. The American Revolution
- HISTORY 151aR. The Founding of the American Republic (Seminar) *Mr. Meyers*
- HISTORY 152b. Problems of Democracy in Jacksonian America (Seminar)  
*Mr. Meyers*
- \*HISTORY 153a. Civil War and Reconstruction
- HISTORY 155a. American Economic History  
See Economics 122a. *Mr. Evans*
- \*HISTORY 159b. Topics in History of American Family Life
- \*HISTORY 161a. The American Political Tradition: Origins to the Civil War
- \*HISTORY 161b. The Modern American Polity
- HISTORY 164a. American Constitutional History, 1865-1937 *Mr. Paul*
- HISTORY 171a. Latin American History: Colonial and Post-Colonial Period  
*Mr. Coes*
- HISTORY 171b. Latin American History: 1890 to Present *Mr. Coes*
- HISTORY 173a. The Family in Latin America *Mr. Coes*
- \*HISTORY 173b. Latin America in the World, 1810 to Present
- HISTORY 180aR. Modern China (Seminar) *Mr. Schrecker*
- HISTORY 182b. Modern Southeast Asian History *Mr. Steinberg*
- \*HISTORY 185a. Studies in Sub-Sahara African History
- \*HISTORY 190b. Historiography
- \*HISTORY 191a. History and Psychology (Seminar)
- \*HISTORY 192a. Comparative Political Theory: China and Europe

\* Not to be given in 1974-75.



**\*HISTORY 193b. The United States and Great Britain: Comparative Perspectives, 1830-1930**

**HISTORY 194a. An Introduction to Historical Geography**

*Mr. Barraclough*

## **COMPARATIVE LITERATURE**

See Joint Program of Literary Studies (page 94).

## **CONTEMPORARY JEWISH STUDIES**

### **Objectives**

The graduate program in Contemporary Jewish Studies offers training for students interested in professional careers in the Jewish community and seeks to advance the field of contemporary Jewish studies. There are three concentrations:

1. Jewish education
2. Jewish communal service (Hornstein Program)
3. Research in contemporary Jewish life

### **Admission**

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to the Contemporary Jewish Studies program. In addition, applicants are expected to submit results of either the Graduate Record Examination or the Miller Analogies Test; a statement which describes the applicant's Jewish training and background and future plans; and a sample of written material. Applicants are encouraged to arrange for a personal interview.

### **Faculty**

Associate Professor LEON A. JICK, *Director*: American Jewish history.

Assistant Professor BERNARD REISMAN, *Associate Director*: American Jewish communal service.

Professor LEONARD J. FEIN: Jewish social policy. Social change. Political sociology of Israel.

Professor ARNOLD GURIN: Social welfare planning and policy.

Professor BENJAMIN HALPERN: Modern Near East history. Political and social history of Palestine and Israel. Modern Jewish history.

Professor NAHUM M. SARNA, *Chairman*, Department of Near Eastern and Judaic Studies.

Professor MARSHALL SKLARE: Sociology of the Jewish community.

Assistant Professor SAUL P. WACHS: Jewish education.

Adjunct Lecturer ROBERT ABRAMSON: Jewish education.

Lecturer MILDRED GUBERMAN: Field work. Jewish communal service.

Lecturer JOSHUA ROTHENBERG: Yiddish.

See the Department of Near Eastern and Judaic Studies for other faculty in Judaic studies and Hebrew language.

\* Not to be given in 1974-75.

Degree Requirements

Master of Arts

*Program of Study.* The program of study leading to the degree of Master of Arts will consist of 14 courses including a fieldwork/internship component. Students usually take eight courses including fieldwork in the first year and six courses including an internship during the second year. Students are expected to fulfill requirements in two core areas: Judaica (classical and contemporary) and methods/practice skills.

During the last week of intersession between the first and second terms of each year, students are expected to participate in a one-week supplemental program of mini-courses with visiting professionals.

*Residence Requirement.* All candidates are expected to spend two years in residence at Brandeis University.

*Language Requirement.* Fluency in Hebrew (or in special circumstances, Yiddish) is required. Students not meeting this requirement upon entrance must take appropriate courses, *not for credit*. The language requirement must be met by the end of the first year.

*Summer Study in Israel.* Directly following their first year of study, students are expected to participate in a five-week Israel seminar sponsored by the Lown Center in cooperation with the Center for Jewish Education in the Diaspora at The Hebrew University. Supplemental scholarship support is available for the seminar. The program is designed for students, most of whom have already participated in education programs in Israel.

*Fieldwork/Internship.* In both years of study, students have practical field experience in a Boston area Jewish educational or communal service organization. First year Jewish communal service students (CJS 248c) spend two days a week in the field, while Jewish education concentrators (CJS 204) make weekly visits to selected Jewish schools. In the second year, all students have a 20 hour a week internship assignment. This schedule requires that students plan to be in residence through the end of May and plan for a shorter intersession than the academic calendar indicates.

*Substantive Paper.* A major substantive paper is developed from some phase of field practice. This is done in conjunction with the student's second year internship assignment. For research concentrators, the requirement is for a Master's thesis based on a research project. The substantive paper/thesis requirement is met during the second year.

Courses of Instruction

CJS 21. Introductory Yiddish	
See Yiddish 1 for description.	Mr. Rothenberg
CJS 24. Intermediate Yiddish	
See Yiddish 2 for description.	To be announced
CJS 25. Readings in Yiddish Literature	
See Yiddish 10 for description.	To be announced
HEBREW 1. Introductory Hebrew	
See NEJS for sections.	Staff
HEBREW 2. Intermediate Hebrew	
See NEJS for sections.	Staff

## **HEBREW 6. Introduction to Hebrew Literature**

See NEJS for sections.

*Staff*

### **CJS 115a. Biblical Literature of the Early Post-Exilic Period**

See NEJS 115a for description.

*Mr. Sarna*

### **CJS 117b. The Problem of Evil in Jewish Philosophy**

See NEJS 117b for description.

*Mr. Fox*

### **CJS 123bR. Classical Biblical Commentaries**

See NEJS 123bR for description.

*Mr. Altmann*

### **CJS 125b. Selected Texts from *Genesis Rabba***

See NEJS 125b for description.

*Mr. Altmann*

### **CJS 133a. Medieval Jewish Philosophy: The Early Phase**

See NEJS 133a for description.

*Mr. Altmann*

### **CJS 139a and b. Modern Hebrew Literature: The Jew and his Realia**

See NEJS 139a and b for description.

*Mr. Brandwein*

### **CJS 140. The Jews in Europe**

See NEJS 140 for description.

*Mr. Ravid*

### **CJS 145b. The Origins of Near Eastern Nationalism**

See NEJS 145b for description.

*Mr. Halpern*

### **CJS 150a. The Jewish Contribution to German Literature**

See German 150a for description.

*Mr. Zohn*

### **CJS 160a. The American Jewish Experience 1654-1885**

A survey of American Jewish history from the earliest settlement to the consolidation by the 19th century German Jewish immigrants of their social, economic and ideological patterns.

*Mr. Jick*

### **CJS 160b. The Emergence of the American Jewish Pattern—1880 to the Present**

The impact of mass immigration from Eastern Europe beginning in the 1880's. The emergence of the institutions, ideologies, life styles and cultural norms which constitute the American Jewish pattern.

*Mr. Jick*

### **CJS 161a. American Jewish Life and Institutions**

See NEJS 161a for description.

*Mr. Sklare*

### **CJS 163a. The Sociology of the American Jew**

See NEJS 163a for description.

*Mr. Sklare*

### **CJS 164b. The Sociology of the American Jewish Community**

See NEJS 164b for description.

*Mr. Sklare*

### **CJS 166a. Modern Jewish Intellectual History to 1870**

See NEJS 166a for description.

*Mr. Halpern*

### **CJS 168a. The Culture of East European Jewry**

See NEJS 168a for description.

*To be announced*

### **CJS 169a. Modern Jewish History: The Destruction of European Jewry**

See NEJS 169a for description.

*Mr. Halpern*

### **CJS 169b. Social Change in Israel**

See Anthropology 172b for description.

*Mr. Weingrod*

**CJS 171b. Trends and Values in Yiddish Literature**

See NEJS 171b for description.

*To be announced*

**CJS 173b. Seminar in Yiddish Literature: Contemporary Poetry**

See NEJS 173b for description.

*To be announced*

**CJS 175a. Religion and Ethnicity in American History**

See American Studies 169a for description.

*Mr. Fuchs*

**CJS 204a. Theory and Practice of Jewish Education**

An examination of the warrant, instruments, actors and structures of Jewish education delineated in several theories of Jewish education. The current Jewish educational scene is surveyed based on readings, discussions and field visits, with emphasis on problems and institutions seen as important for the practice of Jewish education.

*Mr. Wachs*

**CJS 204b. The Curriculum of the Jewish School**

Beginning with an examination of traditional approaches to curriculum through readings and discussion, the class gains tools for identification of issues that have relevance for curriculum development in Jewish education and serious responses to those issues. The practicum introduces the student to problems of curriculum.

*Mr. Wachs*

**CJS 205a. Theory and Practice of Jewish Communal Service**

An introduction to the field of Jewish communal service. This includes a history of Jewish communal services in this country, their relationship to Jewish traditions and to developments in the field of social welfare: the settings in which Jewish services are offered and the factors making for effective organizational performance.

*Mr. Reisman*

**CJS 205b. Theory and Practice of Jewish Communal Service**

The focus of the course is on developing a systematic approach to professional performance in Jewish communal organizations. This involves an examination of several theoretical approaches to helping individuals, groups, and communities. What are the generic principles of the helping process?

*Mr. Reisman*

**CJS 206b. Principles of Informal Education and Small Groups in Jewish Communal Service**

This course introduces students to basic principles of informal, experiential education as these are applicable in Jewish educational and communal organizations. This involves: small group dynamics; structuring learning environments; balance between affective and cognitive processes, and awareness of one's self in the role of group leader-educator.

*Mr. Reisman*

**CJS 207a. Public Policy Within the Jewish Community**

Jewish communities within America may be viewed as policy-making entities. The degree to which the policies they pursue are explicit rather than implicit, consistent rather than inconsistent, and well-informed rather than poorly informed, will vary. So, too, will the nature of power distribution within the community.

*Mr. Fein*

**CJS 207b. The Jewish Life Cycle: Empirical and Normative Appraisals**

This course examines critical stages in the life cycle, from birth through death, both from a socio-psychological and a normative perspective. With respect to each aspect of the life cycle, current literature will be examined, as well as traditional Jewish sources and commentaries.

*Messrs. Fein and Abramson*

**\*CJS 208a. Instructional Theory and Practice**

**CJS 208b. Teaching Liturgy through Inquiry and Discovery**

This course establishes a methodological approach for the teaching of Jewish liturgy through the processes of inquiry and discovery. Model units are developed to serve as examples of the processes. Specific pedagogical techniques are exemplified in the prototypical lesson plans. Students practice the methodology and receive feedback.

*Mr. Wachs*

**\*CJS 209a. Politics and Society in Israel**

**CJS 210a. Seminar in American Jewish History**

*Mr. Jick*

**CJS 210b. Seminar in American Jewish History**

*Mr. Jick*

**CJS 235a and b. Readings in Jewish Education**

*Mr. Wachs*

**CJS 248c. Field Methods in Jewish Communal Service**

Students are placed in selected Jewish communal organizations during the first year for two days a week of field practice. They receive individual supervision from an agency field supervisor, meet every other week with faculty for a group seminar and for periodic individual conferences. *Ms. Guberman and Mr. Reisman*

**CJS 250. Field Methods in Jewish Communal Service and Jewish Education**

In the second year all students are assigned to designated Jewish communal or educational organizations for an internship experience of 2½ days or 20 hours a week. Supervision is provided both by professional personnel of the agencies and by CJS faculty at a bi-weekly seminar, and scheduled individual conferences.

*Ms. Guberman, Messrs. Reisman, Wachs and Abramson*

**CJS 260. Philosophical Foundations of Jewish Ethics**

See NEJS 260 for description.

*Mr. Fox*

**CJS 262b. Problems in the Sociology of the American Jew: A Seminar**

See NEJS 262b for description.

*Mr. Sklare*

**Cross-Registration at Boston College, Boston University and Tufts University**

A full-time graduate student at Brandeis University may enroll in one graduate course at Boston College, Boston University or Tufts University. Brochures suggesting courses for cross-registration at each of the host institutions are available at the graduate school office of each institution.

A student who wishes to enroll in a course at one of these institutions should consult with the instructor in the particular course and should expect to satisfy the prerequisites and requirements normally required for admission to that course, including adherence to the academic calendar of that course.

A student at Brandeis University who wishes to enroll in a graduate course at one of the host institutions should obtain a registration permit from the Graduate School Registrar and should present this permit to the Graduate School Registrar of the host institution.

\* Not to be given in 1974-75.

# ENGLISH AND AMERICAN LITERATURE

## Objectives

The graduate program in English and American literature is designed to offer training in the interpretation and evaluation of literary texts with some attention to the related scholarly disciplines, particularly history and linguistics. It also offers for candidates who have some ability in writing an opportunity to pursue this interest as a normal part of the graduate program.

## Admission

Candidates for admission should have a Bachelor's degree, preferably with a major in English and American literature, and a reading knowledge of French, Italian, German, Greek, or Latin. The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

## Faculty

Professor JOHN H. SMITH, *Chairman*: Renaissance literature.

Professor J. V. CUNNINGHAM: Renaissance literature. Poetry.

Professor EDWARD ENGELBERG: Victorian literature. Modern literature.

Professor VICTOR HARRIS: Seventeenth century literature.

Professor MILTON HINDUS: American literature. Contemporary literature.

Professor BENJAMIN B. HOOVER: Eighteenth century literature.

Professor ROBERT O. PREYER: Victorian literature.

Professor AILEEN WARD: Nineteenth century literature.

Visiting Professor MARK STRAND: Poetry.

Associate Professor ALLEN R. GROSSMAN: Contemporary literature. Seventeenth century literature.

Associate Professor RAY S. JACKENDOFF: Linguistics.

Associate Professor ALAN L. LEVITAN: Renaissance literature.

Associate Professor RICHARD J. ONORATO: Nineteenth century literature.

+++Associate Professor PETER SWIGGART: American literature.

Assistant Professor ARTHUR EDELSTEIN: American literature.

Assistant Professor PHILIP FISHER: Victorian literature. Modern literature.

Assistant Professor MICHAEL T. GILMORE: American literature.

Assistant Professor KAREN WILK KLEIN: Medieval literature.

+++Assistant Professor ALAN LELCHUK: Victorian literature. Creative writing.

Assistant Professor JOAN M. MALING: Linguistics.

Assistant Professor JOHN D. NILES: Medieval literature.

†Assistant Professor S. SUSAN STAVES: Restoration literature.

## Degree Requirements

Following are the degree requirements for the Department of English and American Literature. Students should also consult the Academic Regulations and General Degree Requirements sections on pages 26 and 33.

† On leave, 1974-75.

+++ On leave, 1974-75.

## Master of Arts

*Program of Study.* Each student will take English 200a. In addition, a normal program will consist of five courses, at least three of which will be 200-level seminars. All programs must be approved by the student's adviser and by the Director of Graduate Studies.

*Residence Requirement.* The minimum residence requirement is one year, though students with inadequate preparation may require more.

*Language Requirements.* A reading knowledge of a major foreign language (modern European, ancient Greek, or Latin). The completion of the language requirements at another university does not exempt the student from the Brandeis requirement.

*Qualifying Examination.* An oral examination, by committees of faculty members, will be given at the beginning of the spring term on one of several major texts, the texts to be announced at the end of the fall term. This examination will test a student's ability to read and understand a major literary work or a group of short works by the same author. Admission to the Ph.D. program in addition to qualification for the M.A. degree will depend upon the results of this examination, in addition to course evaluation.

## Doctor of Philosophy

*Admission to the Ph.D. Program.* (1) Students who complete, with distinction, the M.A. requirements at Brandeis University are admitted to the Ph.D. program by the Department upon recommendation of the Committee on Graduate Studies.

(2) Students who enter with a Master's degree or a full year of graduate work in English from another university are required to fulfill the qualifying examination requirement described above under the Master of Arts Program. Provided this requirement is fulfilled, such students may, at the Department's discretion, be admitted to the Ph.D. program after successful completion of a semester at Brandeis and upon recommendation by the Committee on Graduate Studies. At the time of admission, up to a year's residence and course credit for work completed elsewhere may be granted.

*Program of Study.* After admission to the Ph.D. program, each student will plan a program of study with a faculty adviser of his or her choice; each such program must be approved by the Director of Graduate Studies. For the student not given credit for graduate work elsewhere, a normal program of study will include at least four graduate level courses in the student's second year. A student is expected to complete graduate work with a knowledge of the various historical periods and genres of English and American literature, and the program that is chosen should reflect this goal.

*Pre-dissertation Examination.* All candidates for the Ph.D. will be asked to pass an oral examination in the historical period or genre in which the candidate expects to write a dissertation. This examination is normally taken in the semester following satisfaction of the residence requirement, but it may be postponed upon approval by the Director of the Graduate Program. The examination may be taken as many times as necessary without prejudice to a student's standing in the Ph.D. program.

*Residence Requirement.* The minimum residence requirement is one year beyond the Master's degree or two years beyond the Bachelor's.

## Other Requirements

1. Language requirement. A reading knowledge of one major foreign language (modern European, ancient Greek, or Latin). Satisfaction of the language requirement for the Master's degree at Brandeis completes the language requirement for the Ph.D. as well.

2. One of the following, as relevant to a student's research and career plans and as approved by his or her adviser and the Director of Graduate Studies: (a) a reading knowledge of a second major foreign language; (b) one graduate-level course in the literature of a foreign language or in a discipline other than English which is related to the student's dissertation plans.

*Training in Teaching.* Provided openings exist, students in their second and third year in the program can expect to be awarded at least one teaching assistantship each year, provided their academic work is of high calibre.

*Admission to Candidacy.* A student will be recommended by the Department for admission to candidacy for the Ph.D. degree after completing with distinction the program of study and satisfying all Departmental requirements prior to the writing and defense of a dissertation. A student admitted to candidacy must have submitted a formal dissertation proposal, subject to approval by the student's dissertation director and by an additional member of the Departmental faculty.

*Dissertation and Defense.* Each student will submit a dissertation in a form approved by his or her dissertation director and by a committee appointed by the Director of Graduate Studies. The student will defend the dissertation at a final oral examination. The dissertation may be a monograph, a series of closely related essays, a bibliographical project or a textual project.

## **History and Structure of English**

The Department also offers an alternative program in the history and structure of the English language, with specialization in Old, Middle or Early Modern English. For details, address the chairman of the Department.

## **Courses of Instruction**

### **ENGLISH 121a. Old English**

An introduction to the language and literature of the Anglo-Saxons. Readings will include the major extant short poems, including *The Wanderer*, *The Seafarer*, and *The Dream of the Rood*.  
Mr. Niles

### **ENGLISH 121b. Beowulf**

*Prerequisite:* English 121a.  
Mr. Niles

### **ENGLISH 123bR. Chaucer**

A study of Chaucer's poetry in its literary, philosophical, and historical context. The poems, which will be read in Middle English, are *Troilus and Criseyde* and selections from *The Canterbury Tales*.  
Ms. Klein

### **ENGLISH 125a. The Renaissance Lyric**

Short papers or original poems.  
Mr. Cunningham

### **ENGLISH 125b. Modes of the Short Poem**

Short papers or original poems.  
Mr. Cunningham

### **ENGLISH 142aR. Elizabethan Drama**

A survey of major dramatic works, excluding Shakespeare, from roughly the mid-sixteenth to the mid-seventeenth centuries.  
Mr. Smith

### **ENGLISH 143bR. Music and Poetry**

A study of the varying philosophical and aesthetic attitudes toward the relationship of words and music on the parts of poets and composers from the Middle Ages to the present, concentrating on the English Renaissance and contemporary



works. Facility in reading vocal scores is essential; some background in music theory is advisable. *Mr. Levitan*

**ENGLISH 144a. Topics in Poetry and Religion: Prayer-like Poems**

Religious poetry in English from the Middle Ages to the present with emphasis on the 17th century. Materials from Near Eastern, Greek and Roman civilizations will also be considered. Attention will be directed to the common rhetoric and theory of poems and prayers. *Mr. Grossman*

**\*ENGLISH 145b. Religious Poetry of the Seventeenth Century**

**\*ENGLISH 150a. Classical Background of English Poetry: Epic and Pastoral**

**ENGLISH 155a. Milton**

Milton's major poems, early and late, plus a cross-section of his work as pamphleteer and apologist. Pastoral, epic, and iconographic traditions. *Mr. Harris*

**\*ENGLISH 160b. Augustan Satire**

**\*ENGLISH 165b. Restoration Drama**

**ENGLISH 167b. Problems of Poetry**

This course will start with the problem of badness in poetry. Bad, foolish, ugly, etc. poems found in good anthologies or magazines will lead into a more general exploration of the elements of poetry and evaluation of the grounds for aesthetic judgment.

Limited enrollment.

*Mr. Strand*

**ENGLISH 169b. The Ballad**

A close study of selected English and Scottish popular ballads and their North American derivatives. Living songs with tunes. Folklore in the popular ballad. Supplementary readings in the folk tales, drama, and beliefs of the ballad people. Enrollment limited to 15 students; students from anthropology, psychology and music welcomed.

*Mr. Niles*

**ENGLISH 170b. Victorian Poetry and Poetics**

*Mr. Preyer*

**ENGLISH 171bR. Romantic Poetry**

This course will cover the major poetry of Wordsworth, Keats, and Shelley, stressing the development of each poet and the emerging Romantic preoccupation with the figure of the poet. Some reading of Coleridge and Byron will be included. Students will be expected to familiarize themselves with the period and the biographies of the poets studied.

*Mr. Onorato*

**ENGLISH 173b. Poetry and Revolution, 1780-1830**

A study of the impact of the American and French Revolutions on poets and political writers from Blake to Hazlitt. The emergence of the modern concept of revolution and the transformation of traditional mythologies to express new ideas of human destiny will be viewed against the background of historical events.

*Ms. Ward*

**ENGLISH 178a. Dickens and Dostoevsky**

The course will emphasize the modes of grotesque and philosophical comedy, the representation of the city, the romantic extension of realism, and the major literary forms of the novel of ideas and the novel of social reform.

*Mr. Fisher*

**\*ENGLISH 180a. Change and Continuity in Modern Literature**

\* Not to be given in 1974-75.

**ENGLISH 181b. The Experiment Called Modernism**

A technical and thematic study of the self-consciously "modern" movement in English and American writing of the early twentieth century. The works of Joyce and Eliot are the central texts, but the course will include other writers and will study in particular the creation of the phenomena of "Modernism." *Mr. Fisher*

**\*ENGLISH 182b. American Drama**

**ENGLISH 183a. Philosophy and Technique in American Literature**

A study of the ways in which several modern theories of existence have inhabited our literature; Transcendentalism, Naturalism, and Nihilism. The writers to be read will include Emerson, Thoreau, and Hawthorne; Dreiser and Sinclair; Stein and Hemingway; Mailer and Bellow. *Mr. Edelstein*

**\*ENGLISH 183b. Leading American Writers of the Nineteenth Century**

**ENGLISH 184bR. American Transcendentalism: Emerson to Dickinson**

A study of the New England transcendentalist movement and its intellectual sources and influences. The ideas and social criticism of Emerson, Thoreau, Fuller and others, the fiction of Hawthorne and the poetry of Whitman, Dickinson and others will be among the topics explored. *Mr. Swiggart*

**ENGLISH 185bR. James Joyce**

*Mr. Hindus*

**ENGLISH 186bR. Twentieth Century British Drama**

This course will concentrate upon the plays of George Bernard Shaw and Harold Pinter, but a number of other dramatists of the period, including Synge, O'Casey, Beckett and Osborne will also be studied. *Mr. Swiggart*

**ENGLISH 187b. The Fiction of the Self**

This course applies psychoanalytic technique to the reading of fiction and presupposes some knowledge of Freudian thought; it is concerned with fictions of selfhood, both the author's and the reader's. Works by Austen, Mary Shelley, Emily Brontë, Carroll, Woolf, James Stevenson, Sartre, Conrad, Joyce, Nabokov and Lessing will be covered. *Mr. Onorato*

**\*ENGLISH 188b. Linguistics and Literature**

**ENGLISH 191a. Introduction to Linguistics**

This course is to awaken the student's awareness of how much a speaker of English knows about a language that he or she has not been explicitly taught, to show that this knowledge requires explanation, and to develop a theory of linguistic structure to account for it. *Mr. Jackendoff*

**ENGLISH 191aR. Introduction to Linguistics**

*Ms. Maling*

**\*ENGLISH 191b. Introduction to Linguistic Structure**

**ENGLISH 192b. History of the English Language**

An examination of the structure of the English language at various stages in its development, and of the processes of linguistic change relating these stages. No knowledge of linguistics assumed. *Ms. Maling*

**ENGLISH 193a. Problems in Phonology**

The structure of sound systems in human languages. Isolated problems taken from the languages of the world, covering the topics of articulatory phonetics, distinctive features, and the notion of explanation in linguistics. *Ms. Maling*

\* Not to be given in 1974-75.

**ENGLISH 195b. Linguistics and Logic**

An examination of the use of formal logic as an explication of human reasoning, concentrating on recent dialogues between linguisticians and logicians.

*Mr. Jackendoff*

**\*ENGLISH 196a. Semantics**

**ENGLISH 196b. Syntactic Investigations in an Unfamiliar Language**

In this course the student will be confronted with a native speaker of an unfamiliar language (such as Turkish or Amharic) as a source of data. The class will investigate the structure of his or her language and compare it with the structure of English and other languages.

*Prerequisite:* English 191a.

*Mr. Jackendoff*

**\*ENGLISH 197a. Syntactic Theory**

**ENGLISH 197b. Problems in Syntax**

A continuation of English 191a. This course extends the syntactic framework developed in the introductory course through the study of such problems as the complement system, with emphasis on their relevance to grammatical theory.

*Ms. Maling*

**ENGLISH 198b. Linguistics and Music**

*Mr. Jackendoff*

**ENGLISH 199a and b. Directed Research in Linguistics**

*Staff*

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**ENGLISH 101a. Directed Writing: Fiction**

Limited enrollment. Permission of the instructor.

*Mr. Lelchuk*

**ENGLISH 101b. Directed Writing: Fiction**

Limited enrollment. Permission of the instructor.

*Mr. Edelstein*

**ENGLISH 102a and b. Directed Writing: Poetry**

*Prerequisite:* Permission of the instructor. Prospective students should submit manuscripts (no fewer than five and no more than ten poems).

*Mr. Strand*

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**Seminars**

**ENGLISH 200a. The English Seminar: Methods of Literary Study**

Required of all first-year graduate students.

*Mr. Hoover*

**ENGLISH 201a. History and Theory of Criticism: From Plato to Dr. Johnson**

Theories of style and fiction.

*Mr. Cunningham*

**ENGLISH 201b. History and Theory of Criticism: The Development of Modern Critical Theories**

*Mr. Engelberg*

**ENGLISH 203b. Psychoanalysis and Literature**

This course will deal with some of the methods and problems of applied psychoanalysis, from theoretical concerns to examples of applied psychoanalytic criticism to practical applications by students. Knowledge of basic Freudian texts is required.

*Prerequisite:* Consult instructor in Fall Term for permission to enroll in spring.

*Mr. Onorato*

\* Not to be given in 1974-75.

**ENGLISH 208b. Medieval Studies**

An examination of the progressive reshaping of pagan and Christian mythologies as sources for literature from the Old English period to the late Middle Ages.

*Prerequisite:* English 121a or reading knowledge of Old English. *Ms. Klein*

**ENGLISH 215b. Shakespeare**

Syllabus available on request.

*Mr. Cunningham*

**ENGLISH 218a. Metaphysical Poets**

Students in the seminar will determine which poet or poets will be read.

*Mr. Harris*

**ENGLISH 230a. Blake**

A study of Blake's major works both as poetic structures and in relation to their intellectual background, in an attempt to trace the evolution of Blake's "system" with some attention to the relationship between the poems and their illustrations.

*Ms. Ward*

**ENGLISH 236a. Victorian Fiction**

*Mr. Preyer*

**ENGLISH 246a. Hawthorne and James**

*Mr. Swiggart*

**ENGLISH 250a. Yeats in the Modern Period**

Study of the whole poetry of Yeats with stress on the period from 1901-1939. The intention of the course is to read Yeats in the context of his modern contemporaries, such as Hardy, Robinson, Eliot, Pound, and Stevens.

*Mr. Grossman*

**ENGLISH 295b. Studies in a Major Text**

Required of all first year students.

*Ms. Ward*

**ENGLISH 350—369a and b. Directed Research**

Open to advanced graduate students with the consent of the instructor and the Director of Graduate Studies.

351a and b.	<i>Mr. Edelstein</i>	361a and b.	<i>Ms. Ward</i>
352a and b.	<i>Mr. Cunningham</i>	362a and b.	<i>Mr. Levitan</i>
353a and b.	<i>Mr. Harris</i>	363a and b.	<i>Ms. Klein</i>
354a and b.	<i>Mr. Hindus</i>	365a and b.	<i>Mr. Fisher</i>
355a and b.	<i>Mr. Grossman</i>	366a and b.	<i>Mr. Niles</i>
356a and b.	<i>Mr. Onorato</i>	367a and b.	<i>Mr. Jackendoff</i>
357a and b.	<i>Mr. Preyer</i>	368a.	<i>Mr. Lelchuk</i>
359a and b.	<i>Mr. Smith</i>	369a and b.	<i>Mr. Engelberg</i>
360a.	<i>Mr. Swiggart</i>		

**ENGLISH 400—416. Dissertation Research**

400.	<i>Mr. Cunningham</i>	409.	<i>Mr. Swiggart</i>
401.	<i>Mr. Grossman</i>	410.	<i>Ms. Ward</i>
402.	<i>Mr. Harris</i>	411.	<i>Mr. Levitan</i>
403.	<i>Mr. Hindus</i>	412.	<i>Mr. Jackendoff</i>
404.	<i>Mr. Hoover</i>	413.	<i>Mr. Edelstein</i>
405.	<i>Mr. Onorato</i>	414.	<i>Mr. Fisher</i>
406.	<i>Mr. Preyer</i>	415.	<i>Ms. Klein</i>
407.	<i>Mr. Niles</i>	416.	<i>Ms. Staves</i>
408.	<i>Mr. Smith</i>		

## **FRENCH**

See Joint Program of Literary Studies (page 94).

## **GERMAN**

See Joint Program of Literary Studies (page 94).

## **HISTORY**

See Comparative History (page 72) and History of Ideas (page 119).

## **HISTORY OF AMERICAN CIVILIZATION**

### **Objectives**

The graduate program in the History of American Civilization, leading to the degree of Doctor of Philosophy in History, has been designed primarily to educate professional scholars and teachers of American history. The curriculum emphasizes both a comprehensive understanding of American history and the mastery of historical research and writing. For a comparative view of the American experience, students will undertake selective studies in modern European, Asian, Latin American or African history. A related field of study will be defined, according to individual background and interest, in one of the following ways:

1. Training in one of the disciplines of the social sciences of humanities—politics, international relations, or literature, for example—to provide perspectives and methods that can illuminate historical problems;
2. A thematic field in American history, involving a distinctive subject matter and discipline: for example, American social history, American legal and constitutional history, American intellectual history, or American art and architecture.
3. A topic in comparative history, involving a distinctive subject matter and discipline: 20th century British and American literature, for example, or 19th century emigration/immigration, or 18th century American and European political and social philosophy.

A small, select student body will work in close cooperation with the faculty. From the beginning, individual programs of study will be developed to prepare students for their oral qualifying examinations and to guide them toward their dissertation research. Normally, the first year's work is concentrated in American history, including substantial experience in directed research and a critical approach to problems of historiography. Second year students, while pursuing further directed research, chiefly are encouraged to choose courses to complete their preparation in the examination fields. Studies in related fields will be arranged individually with appropriate members of the University's Graduate Faculty, either through standard courses or directed readings. For selected students with appropriate qualifications, there are opportunities for advanced study and research with distinguished scholars at neigh-

boring universities in such fields as legal history, business history and—under a cooperative agreement with The Fletcher School of Law and Diplomacy—international relations. Consent of the chairman of the program, and of The Fletcher School is required. Applicants should note with care the four parts of the examination, specified under *Degree Requirements*, in which all students are expected to demonstrate proficiency.

## Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply to candidates for admission to this program. An undergraduate major in history is the preferred preparation for admission, and the student's undergraduate curriculum should include some fundamental courses in American history and related fields in the social sciences or humanities. Students with the M.A. or a professional degree in history, law, or other related fields are invited to apply. Above all, the admissions committee must be satisfied that the applicant's interest in the History of American Civilization is serious and that his or her aspirations are professional. Students interested in Crown Fellowships or in the special arrangements for study in professional fields at neighboring universities, noted above, should submit applications by January 1, if possible.

## Faculty

Executive Committee. Professor DAVID HACKETT FISCHER, *Chairman*; Professors EUGENE C. BLACK, JOHN P. DEMOS, MORTON KELLER, MARVIN MEYERS; Assistant Professor GERALD S. BERNSTEIN; Visiting Professor ARNOLD M. PAUL; Adjunct Professor JOHN P. ROCHE.

## Staff

Professor EUGENE C. BLACK: Comparative Anglo-American history.

+++Professor JOHN P. DEMOS: Family and community. Colonial America.

+++Professor DAVID HACKETT FISCHER: Social and political structure. Early Republic.

+Professor MORTON KELLER: Legal and political institutions. Modern America.

Professor MARVIN MEYERS: Ideas and politics. Jacksonian America.

Assistant Professor GERALD S. BERNSTEIN: American art and architecture.

Assistant Professor JAMES R. GREEN: Labor and reform movements. Modern America.

Adjunct Professor JOHN P. ROCHE: Constitutional law and politics. Contemporary history.

Visiting Professor ARNOLD M. PAUL: Legal history.

## Degree Requirements

### Master of Arts

No one will be accepted in the program who is not a doctoral candidate. Applications from persons seeking a terminal M.A. degree are not welcome. However, the M.A. degree in History may be awarded to those who (1) have successfully completed one full year of residence at Brandeis University (eight half-courses), including two 200-level research courses, and (2) have passed the foreign language requirement.

### Doctor of Philosophy

*Program of Study.* Doctoral candidates must complete two years in residence at Brandeis, and a minimum of sixteen half-courses. Programs of study and concentration will

† On leave, 1974-75.

+++ On leave, Spring Term, 1974-75.

be formulated for each student, subject to the approval of the Executive Committee. Incoming students normally will be expected to take one full course of Directed Research in American History in their first year of residence. The Committee may, at its discretion, grant a student transfer credit of up to one year toward the Ph.D. residence requirement for relevant graduate or professional work done elsewhere. Application for such credit shall be considered only after a student has completed one semester's residence in a full-time program. The second 200-level Directed Research course may be waived by the committee on the basis of a Master's thesis or comparable research project at the graduate or professional level done elsewhere.

*Language Requirement.* A high level of reading proficiency in one foreign language is required of all students. Students are expected to pass the language examination during the first year of residence. A student who has not passed the foreign language examination by the end of the first year is not eligible for financial aid from the University for the second year. The completion of language requirements at another university does not exempt the candidate from the Brandeis requirement. Special review classes will be available.

*Qualifying Examination.* Each doctoral candidate must pass at the doctoral level a qualifying examination in the following four fields: (1) general American history; (2) a period of specialization in American History; (3) an area of comparative modern European, Asian, Latin American or African history; (4) a related field of study, involving one of the disciplines in the social sciences or the humanities. (Note the three alternative approaches for the fourth field specified under Objectives.) The period of specialization will normally be selected from the following: 1607-1763, 1763-1815, 1815-1877, 1877-1914, 1914-present. The special period may be redefined on request, for good academic reasons. Proposed comparative and related fields must be approved by the Executive Committee. Students entering the program without previous graduate training in American history are expected to take the Qualifying Examination no later than the end of their fifth semester of residence and must pass the examination by the end of the sixth semester. Students who have earned an M.A. in history elsewhere, or who have one year of transfer credit for work taken elsewhere, are expected to take and pass the Qualifying Examination by the end of their second year in the program.

Unless the student elects a single three-hour oral examination on all four fields, the Qualifying Examinations will be taken separately in each of the fields, with the general American field coming at the end. For each of the fields (2), (3), and (4), as above, the student will choose one appropriate professor with the approval of the chairman of the program. That professor, in consultation with the student, will define the requirements, course of preparation, and mode of examination (written and/or oral) for the field.

For the general American field, the Chairman will appoint two members of the Executive Committee as examiners. The student may choose a one-hour oral examination or a three-hour written examination followed, if the examiners so require, by an oral examination. In either case, the two professors in consultation with the student will define in advance the major themes or problems on which the examination will be based. So far as possible, fields (3) and (4), as above, should be selected with a view to broadening and deepening the student's understanding of his or her American history fields, and providing valuable background for the dissertation work.

With the consent of the Chairman and the professor concerned, qualified students in appropriate cases may be examined in fields (3) or (4), as above, by a faculty member at another university. Moreover, with the consent of the Executive Committee, examinations in fields (3) or (4), as above, may be waived for students with the M.A., J. D., or other advanced degrees that represent a level or kind of training and achievement fully equivalent to those required in the Brandeis examinations for those fields.

*Admission to Candidacy.* A student may be admitted to candidacy for the Ph.D. degree upon satisfactory completion of the following: course and residence requirements, demonstration of a high level of proficiency in one foreign language, and the qualifying examinations.

*Dissertation and Defense.* The candidate will be required to prepare a prospectus for a dissertation to be submitted for approval to the Committee. When the dissertation is accepted by the Committee, a final oral examination will be scheduled at which the candidate must successfully defend his or her dissertation before the Committee and other members of the faculty who may participate. After a candidate has successfully defended the dissertation, he or she will give a public lecture.

## **Courses of Instruction**

### **HISTORY 150a. Colonial America: People, Culture and Society**

An exploration of significant themes in the colonial period of American history: social structure, routines of daily life, ecology, race, and related matters. The course will seek to balance the viewpoint of an anthropologist visiting an "exotic" culture with that of an historian searching for the roots of modern America.

*Mr. Demos*

### **\*HISTORY 150b. The American Revolution**

### **HISTORY 151aR. The Founding of the American Republic**

An inquiry into the ideas and movements that formed a new republican regime in the United States.

*Mr. Meyers*

### **HISTORY 152b. Problems of Democracy in Jacksonian America (Pro-Seminar)**

An examination of the nature and consequences of democratization in American society and politics, emphasizing issues of interpretation.

*Mr. Meyers*

### **\*HISTORY 153a. Civil War and Reconstruction**

### **HISTORY 155a. American Economic History**

See Economics 122a for description.

*Mr. Evans*

### **\*HISTORY 159b. Topics in History of American Family Life**

### **\*HISTORY 161a. The American Political Tradition: Origins to the Civil War**

### **\*HISTORY 161b. The Modern American Polity**

### **HISTORY 162aR. The History of American Radicalism**

A seminar on dissenting thought and radical action from Owenite socialism through Debsian socialism with discussions and papers.

*Mr. Green*

### **HISTORY 162b. United States in the 1930's: A Capitalist Society in Crisis**

The social effects of the Depression in American life with readings and discussion drawn primarily from the documents of the era.

*Mr. Green*

### **HISTORY 164a. American Constitutional History, 1865-1937**

The development of American constitutional law and theory since the Civil War with the emphasis on the adaptation of the constitution to the changing needs of American society.

*Mr. Paul*

### **\*HISTORY 167a. Topics in American Legal History**

### **HISTORY 190b. Historiography**

*Mr. Fischer*

\* Not to be given in 1974-75.



**\*HISTORY 191a. History and Psychology**

**\*HISTORY 191b. Conversations on American History**

**\*HISTORY 193b. The United States and Great Britain: Comparative Perspectives, 1830-1930**

**HISTORY 201aA—212aA. Directed Research in American History**

Students will normally elect one of the following in the fall term of the first and the second years. Each is designed to provide experience in designing, researching and writing a substantial essay of a monograph kind, based on extensive use of sources. This is the equivalent of a full course and extends the due date for the final draft of the paper to March 1, to permit sufficient time for a major project. Specific research topics are selected by the student in consultation with the professor.

**201aA. Topics in American Art and Architecture**

*Mr. Bernstein*

**203aA. Topics in the History of Community and Family, with emphasis on the Colonial Period**

*Mr. Demos*

**204aA. Topics in Social History, with emphasis on the Early Republic**

*Mr. Fischer*

**\*205aA. Topics in the History of Legal and Political Institutions, with emphasis on Modern America**

**207aA. Topics in Political and Social Thought, with emphasis on the period 1750-1850**

*Mr. Meyers*

**209aA. Topics in Constitutional and Political History, with emphasis on the 20th century**

*Instructor to be Announced*

**212aA. Topics in Legal History**

*Mr. Paul*

**HISTORY 301-310. Readings in the History of American Civilization**

The following are available in either semester.

301a or b. *Mr. Bernstein*

\*305a or b.

302a or b. *Mr. Black*

307a or b.

*Mr. Meyers*

303a. *Mr. Demos*

309a or b.

*Mr. Roche*

304a or b. *Mr. Fischer*

310a or b.

*Mr. Green*

**HISTORY 401-409. Dissertation Research**

401. *Mr. Bernstein*

405. *Mr. Keller*

403. *Mr. Demos*

407. *Mr. Meyers*

404. *Mr. Fischer*

409. *Mr. Roche*

For courses available to History of American Civilization students in other historical areas, see the listings by departments and programs in the Graduate School and College catalogs, especially under Comparative History and History of Ideas. For courses at The Fletcher School of Law and Diplomacy, available with the consent of the chairman of this program, and The Fletcher School, see their catalog in the History Department office.

\* Not to be given in 1974-75.

# JOINT PROGRAM OF LITERARY STUDIES

Classics, Comparative Literature, French, German, Russian and Spanish.

## Objectives

The joint program of literary studies will accept only students who declare themselves for the Ph.D. degree in the areas listed above. Interdisciplinary in design, the program aims to train literary scholars and teachers whose professional capabilities will be broader than their individual specialties. Students will have the opportunity to study aesthetic theory, methodology, literature and the sister arts. A small and carefully selected student body will work closely with the faculty of the program and with one another in a core curriculum before specializing. Students are encouraged to plan an individual program of studies within their interests in consultation with their adviser(s). The program offers a variety of means for students to augment their specialties by study in related areas, such as Philosophy, Art, Music.

Although the program encourages individual initiative, with the advice and consent of adviser(s), it should be stressed that all students, whatever their areas, must master the basic literature, primary and secondary, in their field. The General Examinations will assume both breadth and depth of such knowledge. (Reading lists for each area are available.)

## Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this program. Applications must be received no later than February 15. Please be sure to mark clearly the *area* of your choice on the application form. Each applicant must submit at least *one* college-level essay on a literary subject (which may be written in English) as a sample of work.

## Faculty

Committee:

Professor EDWARD ENGELBERG, *Chairman* (Comparative Literature)

Professor DENAH L. LIDA (Spanish)

Professor MURRAY SACHS (French)

Professor HARRY ZOHN (German)

Associate Professor DOUGLAS J. STEWART (Classics)

Associate Professor ROBERT SZULKIN (Russian)

In addition, all faculty members of the Departments of Classics, Germanic and Slavic Languages, and Romance and Comparative Literature participate in this program.

## Degree Requirements

### Master of Arts

Only doctoral candidates will be accepted into the program. However, students who have completed two years of full-time study in residence may be awarded the M.A. degree. Such students must be in good standing (no incompletes). In addition, such students must have passed the language requirement, either by certification and/or examination, as follows: single area candidates: *one* foreign language *other* than the major language; comparative literature candidates: *two* foreign languages *other* than the major language. Finally, such students must have passed satisfactorily the Qualifying Examinations. (Students who receive this M.A. will be expected to demonstrate to the

satisfaction of the Committee substantial competence in *one* of the areas of the program: e.g., Spanish, Russian, French.

### Doctor of Philosophy

*Program of Study.* Individual programs of study will be arranged between students and their advisers. The core curriculum consists of several elements: all students in the Program are obligated to enroll in Literary Studies 201a and 201b (The History and Theory of Criticism from Aristotle to the Moderns) and in Literary Studies 200a (Methods of Research). All students in the Program will be held responsible for certain works on literary theory, literary history, aesthetics (not studied in the criticism seminars) at the time of General Examination.

Although the Program is designed to permit students to develop their studies coincident with their interests and talents, and in consultation with their adviser(s), full-time students are expected to enroll in at least *three* literary studies seminars each year during the first two years of residence. In the first year students are obliged to enroll in the year seminar, History and Theory of Criticism, and Methods of Research (one semester); hence first year students are expected to augment this schedule with *at least* one or two additional seminars from the literary studies offerings.

*Residence Requirements.* The minimum residence requirement is two years of full-time study beyond the bachelor's degree.

*Language Requirements.* Students will be asked to demonstrate a reading competence in *at least* two foreign languages to be determined in consultation with their advisers. In certain areas of specialization, additional languages (e.g., Latin) may become necessary research tools, (comparative literature students should consult the special statement on language requirements below). Students must be certified in at least one language by the end of the first year in residence.

*Qualifying Examination.* During the spring term of his first year in residence, each candidate will take a Qualifying Examination to demonstrate an ability to analyze literary texts. In consultation with the student's faculty adviser, the candidate will select a text in a field of interest (comparative literature candidates will select *two* texts), either prose or verse. Students will prepare a written analysis of the text and subsequently discuss their analysis of this text orally with a committee of three faculty members. Candidates for the degree in comparative literature will select comparative texts.

*General Examination.* Students may take the General Examination whenever they and their advisers feel they can appropriately do so. However, normally students should plan to complete the General Examination no later than the end of the third year in residence. Examinations will be offered twice a year, October and May. They will be written and oral. Details about the General Examinations and procedures will be distributed on request.

*Admission to Candidacy.* Candidates will be recommended for admission to candidacy when the residence and language requirements have been met, the General Examinations have been successfully passed, and a prospectus of the candidate's proposed dissertation topic has been approved by a committee of the area concerned.

*Dissertation and Defense.* The completed dissertation must be read and found acceptable by its director and two other readers before the candidate is eligible for the Final Oral Examination. The Final Oral Examination will be conducted by a committee of not less than four, one of whom must come from outside the candidate's area.

*Teaching.* All students in the Program are expected to do some supervised teaching, either as a teaching assistant or by means of other arrangements. In some areas, where

teaching assistantships may at times be unavailable, students will be expected to fulfill some teaching opportunities (occasional class lectures, for example) without remuneration.

### For Candidates in Comparative Literature

1. Any student in the Program who declares candidacy in comparative literature should decide, as soon as possible, on a *major* and *minor* literature. The major literature may not be English or American. Exact "proportions" cannot be stated in advance and will be worked out in consultation between students and advisers and the Area Coordinator.

2. Candidates in comparative literature are expected to take three language examinations as follows:

- a. The major language, which should be near level of mastery (reading, writing and speaking) on acceptance to the Program. Students may simply be "certified" for this language if their level of competence is obvious.
- b. The second foreign language should be mastered as a reading language with a fluency that will permit easy access to all primary and secondary literature in the specified area.
- c. The third foreign language should be a reading tool for primary and especially secondary materials.

It is quite possible that for certain areas of specialization—Medieval, Renaissance, etc.—additional languages will become necessary (e.g., Latin, Catalan, Old French).

### Courses of Instruction

LITERARY STUDIES 200c. **Methods of Research** *To be announced*

LITERARY STUDIES 201a. **History and Theory of Criticism: From Plato to Dr. Johnson**

See English 201a for description.

*Mr. Cunningham*

LITERARY STUDIES 201b. **History and Theory of Criticism: The Development of Modern Critical Theories** *Mr. Engelberg*

LITERARY STUDIES 202b. **Fiction: Theory and Practice** *Mr. Sachs*

\*LITERARY STUDIES 203a. **Romantic Phenomena**

\*LITERARY STUDIES 204b. **Theory and Practice of Literary Translation**

\*LITERARY STUDIES 205a. **Crosscurrents in the French and English Enlightenment**

\*LITERARY STUDIES 206a. **The Comic in Literature: Theory and Practice**

\*LITERARY STUDIES 207b. **Origins of the Anti-Intellectualist Tradition in the French Renaissance**

LITERARY STUDIES 208b. **Odysseus: The Hero** *Mr. Stewart*

LITERARY STUDIES 209a. **Modern Phenomena**

This course will be alternated with 203a (Romantic Phenomena). Different themes and problems will be examined each time the course is offered. *Mr. Engelberg*

LITERARY STUDIES 210a. **Genesis and Development of a Myth: Don Juan** *Ms. Lida*

\* Not to be given in 1974-75.

## LITERARY STUDIES 300—305. Readings in Area Studies: Tutorials

300a and b.	Classics. Readings in Latin and Hellenic Texts	Mr. Stewart and Staff
301a and b.	Comparative Literature. Readings in Comparative Texts	Mr. Engelberg and Staff
302a and b.	French. Readings in French Texts	Mr. Sachs and Staff
303a and b.	German. Readings in German Texts	Mr. Zohn and Staff
304a and b.	Russian. Readings in Russian Texts	Mr. Szulkin and Staff
305a and b.	Spanish. Readings in Spanish Texts	Ms. Lida and Staff

## LITERARY STUDIES 350—355. Directed Research

Open to advanced graduate students with the consent of the instructor and the Chairman of the Literary Studies Program.

350a and b.	Classics	Mr. Stewart and Staff
351a and b.	Comparative Literature	Mr. Engelberg and Staff
352a and b.	French	Mr. Sachs and Staff
353a and b.	German	Mr. Zohn and Staff
354a and b.	Russian	Mr. Szulkin and Staff
355a and b.	Spanish	Ms. Lida and Staff

## LITERARY STUDIES 400. Dissertation Research

Staff

Following is a list of selected courses in each of the areas which constitute the Joint Program of Literary Studies which may be of special interest to graduate students. For a full list of all courses available consult the undergraduate catalog under Departments of Classics, Germanic-Slavic Languages, and Romance and Comparative Literature.

### Classics

GREEK 116a.	Greek Comedy: Aristophanes	Mr. Higgins
GREEK 116b.	The <i>Oresteia</i> of Aeschylus	Mr. Higgins
LATIN 116a.	Silver Age of Latin I: The <i>Satyricon</i> of Petronius	Mr. Wiesen
LATIN 116b.	Silver Age of Latin II: The <i>Annales</i> of Tacitus and the <i>Pharsalia</i> of Lucan	Mr. Muellner

### Comparative Literature

COMPARATIVE LITERATURE 116a.	Image of Man in European Renaissance Literature	Mr. Lansing
COMPARATIVE LITERATURE 180a.	Versions of the 'Absurd'	Mr. Engelberg
COMPARATIVE LITERATURE 130b.	The Crisis of Conscience	Mr. Cloonan
COMPARATIVE LITERATURE 148b.	The Lyric since Valéry	Mr. Yglesias

## French

FRENCH 119a.	French Romanticism	<i>Mr. Sachs</i>
FRENCH 190a.	Major Authors Seminar: Rousseau	<i>Mr. Gendzier</i>
FRENCH 116b.	The French Renaissance	<i>Ms. Harth</i>
FRENCH 135a.	Great Age of French Drama	<i>Mr. Cloonan</i>
FRENCH 190b.	Major Authors Seminar: Proust	<i>Mr. Varkonyi</i>

## German

GERMAN 130bR.	German Romanticism	<i>Mr. Stavenhagen</i>
GERMAN 110aR.	Introduction to Goethe	<i>Mr. Zohn</i>
GERMAN 160b.	German Literature from Naturalism to the Second World War	<i>Mr. Frey</i>

## Italian

ITALIAN 110b.	Modern Italian Fiction	<i>Mr. Lansing</i>
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## Russian

RUSSIAN 153a.	Russian Poetry—Russian Romanticism	<i>Mr. Szulkin</i>
RUSSIAN 150b.	Russian Prose—The Short Story in the Nineteenth Century	<i>Mr. Szulkin</i>
RUSSIAN 161b.	The Structure of Modern Russian	<i>Mr. Hanson</i>

## Spanish

SPANISH 161a.	Master of Modern Latin American Poetry	<i>Mr. Yglesias</i>
SPANISH 120aR.	Cervantes	
In depth study of <i>Don Quijote</i> in Spanish.		<i>Ms. Lida</i>
SPANISH 170b.	The Generation of 1898	<i>Mr. Duffy</i>



# MATHEMATICS

## Objectives

The graduate program in mathematics is designed primarily to lead to the Doctor of Philosophy degree. The formal course work is devoted to giving the student a broad foundation for work in modern pure mathematics. An essential part of the program consists of seminars on a variety of topics of current interest in which mathematicians from Greater Boston often participate. In addition, the Brandeis-Harvard-M.I.T. Mathematics Colloquium gives the student an opportunity to hear the current work of eminent mathematicians from all over the world.

## Admission

The general requirements for admission to graduate work in mathematics are the same as those for the Graduate School as a whole. The department has available a variety of fellowships and scholarships for well-qualified students. To be considered for such financial support the student should submit an application by February 1.

## Faculty

Professor JEROME P. LEVINE, *Chairman*: Differential Topology. Knot Theory.

Professor MAURICE AUSLANDER: Commutative and Homological Algebra.

Professor EDGAR H. BROWN, JR.: Algebraic Topology and Differential Topology.

+++Professor DAVID A. BUCHSBAUM: Algebra and Homological Algebra.

+Professor HAROLD I. LEVINE: Differential Topology and Singularities of Differentiable Maps.

+Professor TERUHISA MATSUSAKA: Algebraic Geometry.

Professor ALAN L. MAYER: Algebraic Geometry.

Professor PAUL H. MONSKY: Algebraic Geometry.

+Professor RICHARD S. PALAIS: Differential Topology and Global Analysis.

Associate Professor DAVID I. LIEBERMAN: Algebraic Geometry. Several Complex Variables.

Assistant Professor JAMES CARLSON: Several Complex Variables. Algebraic Geometry.

+Assistant Professor DAVID EISENBUD: Algebra and Ring Theory.

Assistant Professor STAVROS G. PAPASTAVRIDIS: Algebraic Topology.

Assistant Professor ARNOLD PIZER: Algebra. Number Theory.

Assistant Professor CHARLES ROCKLAND: Partial Differential Equations.

Assistant Professor MEHRDAD SHAHSHAHANI: Differential Geometry.

Assistant Professor GERALD W. SCHWARZ: Geometric Analysis

Instructor DANIEL R. FARKAS: Algebra.

Instructor ARTHUR GOLDHAMMER: Topology.

Instructor LESLIE C. WILSON: Analysis.

## Degree Requirements

### Master of Arts

1. One year's residence as a full-time student.

† On leave, 1974-75.

+++ On leave, Spring Term, 1974-75.

2. Successful completion of an approved schedule of courses.
3. Satisfactory performance on the General Examination by the end of the second year.
4. Proficiency in reading French, German, or Russian.

### **Doctor of Philosophy**

1. Residence as a full-time student for two years.
2. Successful completion of an approved schedule of courses.
3. Superior performance in the General Examination by the middle of the second year.
4. Superior performance in the Qualifying Examination.
5. Proficiency in reading two of French, German or Russian.
6. Doctoral dissertation approved by the Department.
7. Final examination consisting of the defense of dissertation.

*Program of Study.* The normal first year of study consists of Mathematics 101a and b, 121a and b and two semesters of first-year analysis. The first-year analysis courses are 110a, 111a and 112aR. (In general, students will have covered the material in one of these courses as undergraduates.) Students may elect to substitute higher level courses for one or more of these on the basis of their preparation. They should discuss this possibility with the graduate adviser. The second year's work will normally consist of three higher level courses in addition to preparation for the qualifying examinations described below. Upon completion of the qualifying examinations, the student will choose a dissertation adviser and begin work on a thesis. This should be accompanied by advanced courses and seminars.

*General Examination.* The General Examination consists of three examinations in the fields of algebra, analysis and topology. The content of these examinations is described in syllabi which are made available to the entering student. The examinations are given twice yearly. They may be taken as often as desired, but at least one must be passed by the end of the first year. The remainder must be completed as described above in *Degree Requirements*.

*Qualifying Examination.* The Qualifying Examination consists of two parts: a major examination and a minor examination. Both are normally taken in the latter part of the second year but may occasionally be postponed until early in the third year. For the major examination the student will choose a limited area of mathematics e.g., differential topology, or several complex variables, or ring theory—and a major examiner from among the faculty. Together they will plan a program of study and a subsequent examination in that material. The aim of this study is to prepare the student for research toward the Ph.D. The minor examination will be more limited in scope and less advanced in content. The procedures are similar to those for the major examination, but its subject matter should be significantly different.

*Admission to Candidacy.* To be admitted to candidacy for the Ph.D. degree in Mathematics, the student must have successfully completed the general and qualifying examination, must demonstrate proficiency in reading French, German or Russian and must be recommended for candidacy by the department.

*Dissertation and Defense.* The doctoral degree will be awarded only after the submission and acceptance of an approved dissertation and after the successful defense of that dissertation.



## Courses of Instruction

### MATHEMATICS 101a and b. Algebra I

Groups, rings modules. Galois theory. Affine rings and rings of algebraic numbers. Multi-linear algebra. The Wedderburn Theorem. *Mr. Monsky*

### MATHEMATICS 110a. Geometric Analysis

The differential. The implicit and inverse function theorems, change of variable in integration. Integration of differential forms and vector fields. *Mr. Wilson*

### MATHEMATICS 110b. Topics in Geometric Analysis

Prerequisite: Mathematics 110a. *Mr. Wilson*

### MATHEMATICS 111a. Real Analysis

Hilbert and Banach spaces, Baire category, the open mapping and Hahn-Banach theorems. Lebesgue measure in  $\mathbb{R}^n$ , abstract integration theory,  $L^p$ ,  $C(X)$ . Fourier series and transforms. *Mr. Mayer*

### MATHEMATICS 112aR. Complex Analysis

Power series, Cauchy formula and basic theorems. Meromorphic functions, Mittag-Leffler and Weierstrass theorems, residue theory. Analytic continuation and conformal mappings. *Mr. Lieberman*

### MATHEMATICS 121a and b. Topology I

Point set topology, fundamental group, covering spaces. Simplicial complexes, elementary homology and cohomology theory with applications, cup and cap products, Poincaré duality. *Mr. Goldhammer*

### MATHEMATICS 199a and b. Readings in Mathematics

*Staff*

### \*MATHEMATICS 201a Algebra II

### \*MATHEMATICS 202a Algebraic Geometry I

### \*MATHEMATICS 204a and b. Homological Algebra I

### MATHEMATICS 207a. Homological Methods in Commutative Ring Theory

Categories, functors, derived functors and satellites, projective dimension, applications to regular local rings. *Mr. Buchsbaum*

### MATHEMATICS 211. Analysis II

Topics in partial differential equations. *Mr. Rockland*

### MATHEMATICS 221. Topology II

Homotopy theory. Classifying spaces, characteristic classes, differentiable manifolds, elementary co-bordism theory. *Mr. Brown*

### MATHEMATICS 250a and b. Riemann Surfaces and Algebraic Curves

A combined topological analytic and algebra-geometric approach to the subject. *Mr. Carlson*

### MATHEMATICS 299a and b. Readings in Mathematics

*Staff*

### MATHEMATICS 312a and b. Several Complex Variables

The first term will cover elementary theory of functions of several complex variables.  $L^2$  estimates. Kernel functions. Pseudoconvexity. Further topics as time permits. *Mr. Shahshahani*

\* Not to be given in 1974-75.

**MATHEMATICS 321a and b. Topics in (topological) K-theory and related subjects**

*Mr. Brown, Fall Term  
Mr. Papastavridis, Spring Term*

**MATHEMATICS 335a and b. Non-Commutative Algebra**

A second-year graduate course in representation theory of Artin rings and finite groups. Topics covered are modules over Artin rings, representation theory of hereditary Artin algebras, and representations of finite groups, including Brauer's main theorems.

*Mr. Auslander*

**MATHEMATICS 399a and b. Readings in Mathematics**

*Staff*

**MATHEMATICS 401—411. Research**

Independent research for the Ph.D. degree.

- |                           |                               |
|---------------------------|-------------------------------|
| 401. <i>Mr. Auslander</i> | 407. <i>Mr. Monsky</i>        |
| 402. <i>Mr. Brown</i>     | 408. <i>Mr. Palais</i>        |
| 403. <i>Mr. Buchsbaum</i> | 409. <i>Mr. Mayer</i>         |
| 404. <i>Mr. H. Levine</i> | 410. <i>Mr. Lieberman</i>     |
| 405. <i>Mr. J. Levine</i> | 411. <i>Mr. Papastavridis</i> |
| 406. <i>Mr. Matsusaka</i> |                               |

## MEDITERRANEAN STUDIES

### Objectives

The program of studies aims at preparing the student for teaching and research in the history, languages, and archaeology of the ancient civilizations of the Nile valley and western Asia. Students with knowledge of classical languages and history are given an opportunity to enlarge the scope of their studies with courses given in Cretan, Aegean, and Cypriote archaeology.

The program has a twofold purpose: first, to train students who wish to specialize in these areas of study; second, to offer an opportunity to students in other fields to integrate with their own studies the courses given in the Department.

A number of general courses which do not require knowledge of ancient languages are designed to serve the needs of undergraduates who wish to expand their cultural background by the study of ancient civilizations ancestral to Western cultures.

### Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area.

Students planning to enter this Department should take as much Hebrew, Greek and Latin as possible during their undergraduate study. They should also make every effort to achieve a sight reading knowledge of French and German before embarking on graduate work.

### Faculty

Professor LOUIS V. ŽABKAR, *Chairman*: Egyptian language and archaeology.

Assistant Professor IAN A. TODD: Mediterranean archaeology.

Lecturer GORDON D. NEWBY: Arabic language and Islamic civilization.

Instructor: MARTHA E. MORRISON: Cuneiform studies. Mesopotamian history. Ugaritic language.

## Degree Requirements

### Master of Arts

*Program of Study.* Each candidate for the Master's degree is required to complete satisfactorily not less than twenty-four semester hours of course work in the Department, plus any courses outside the Department that the major professor may prescribe. The candidate must also show a command of either Latin or preferably Greek, and of Hebrew or Arabic, plus at least one other Oriental language (such as Akkadian, Ugaritic, or Egyptian). Master's examinations will not be administered before the end of the second year of residence, except by special permission of the Department.

*Language Requirement.* A reading knowledge of French or German is required.

*Qualifying Examinations.* The student must demonstrate, in written and oral examinations, proficiency in the sources of two major areas of the program.

### Doctor of Philosophy

The requirements are the same as for the Master of Arts degree, plus twenty-four additional semester hours of course work in the Department, a reading knowledge of two modern foreign languages (ordinarily French and German), and a doctoral dissertation. Doctoral examinations will not be administered before the end of the third year of residence, except by special permission of the department.

*Admission to Candidacy.* A student shall be eligible for admission to candidacy upon completing the language requirements and satisfactorily passing written and oral examinations. A thorough competence must be demonstrated in the field of concentration, and proficiency in another area of the program elected by the student.

*Dissertation and Defense.* The dissertation should be a significant and original contribution to scholarship and should demonstrate a capacity for independent research based on primary sources. After submission of the dissertation, the candidate will be expected to defend it in a final oral examination.

### Courses of Instruction

**\*MEDITERRANEAN STUDIES 101. History of Egyptian Civilization**

**MEDITERRANEAN STUDIES 108b. The Concept of Man in the Ancient Near East**

An examination of how the peoples of ancient Near Eastern civilizations reflected upon man, and how they expressed their thoughts about him. *Staff and NEJS*

**\*MEDITERRANEAN STUDIES 109a. Political and Cultural History of Mesopotamia**

**\*MEDITERRANEAN STUDIES 110 The Early Prehistoric Archaeology of the Near East**

**\*MEDITERRANEAN STUDIES 111. The Archaeology of Syria-Palestine**

**MEDITERRANEAN STUDIES 112. The Archaeology of the Aegean and the Near East**

An introductory survey of the archaeology of the Aegean, Anatolia, Syria-Palestine, Mesopotamia and Egypt from the earliest periods to the end of the Late Bronze Age. *Mr. Todd*

**\*MEDITERRANEAN STUDIES 113. History of the Ancient Near East**

**\*MEDITERRANEAN STUDIES 115. The Archaeology of Anatolia**

\* Not to be given in 1974-75.

**MEDITERRANEAN STUDIES 116a. Archaeology of Cyprus**

An examination of archaeological sites and material from the earliest period to the Iron Age. *Mr. Todd.*

**\*MEDITERRANEAN STUDIES 117. Archaeology of Mesopotamia and Iran**

**\*MEDITERRANEAN STUDIES 118. Archaeological Techniques Seminar**

**MEDITERRANEAN STUDIES 119a. The Neolithic Period in Anatolia**

A detailed discussion of Turkish Neolithic sites and material in relation to other areas of the Near East.

*Prerequisite:* One of the following: MEDST 110, 111, 112, 113, 116 or 117 or permission of the instructor. *Mr. Todd*

**MEDITERRANEAN STUDIES 119b. The Archaeology of the Aegean**

A survey of archaeological sites and material of mainland Greece, Crete and the Cyclades from the Aceramic Neolithic through the Late Bronze Age. *Mr. Todd*

**MEDITERRANEAN STUDIES 125. Beginning Classical Arabic**

A first course in Classical Arabic covering the essentials of grammar, reading, pronunciation, translation and composition. *Mr. Newby.*

**MEDITERRANEAN STUDIES 126. Intermediate Arabic**

See NEJS 102 for description. *Mr. Dankoff*

**MEDITERRANEAN STUDIES 130. Elementary Akkadian**

Intensive study of Akkadian based on the grammars of Ungnad and von Soden. Readings in the Code of Hammurabi and related material. *Ms. Morrison*

**\*MEDITERRANEAN STUDIES 136. Hittite**

**MEDITERRANEAN STUDIES 138. Ugaritic**

Ugaritic grammar and poetic texts will be studied with frequent reference to Hebrew and Akkadian literatures. *Ms. Morrison*

**MEDITERRANEAN STUDIES 140. Elementary Egyptian**

A study of Middle Egyptian based on Gardiner's grammar. The principal texts to be read are those included in Blackman's *Middle Egyptian Stories* and de Buck's *Readingbook*. In the second semester some Middle Egyptian hieratic is read. *Mr. Zabkar*

**\*MEDITERRANEAN STUDIES 162b. History of Meroitic Civilization**

**\*MEDITERRANEAN STUDIES 170a. Early Arabic Culture**

**MEDITERRANEAN STUDIES 171bR. History of Medieval Arabic Culture**

A history of the Arabs from the Abbasid caliphate to the fall of Constantinople. Emphasis on the Crusades, Muslim Spain, Arabian Nights, interaction with the West. *Mr. Newby*

**MEDITERRANEAN STUDIES 177b. Archaeological Method and Theory: Seminar**

See Anthropology 177b for description. *Mr. Cowgill*

**MEDITERRANEAN STUDIES 185a. Mathematical and Computer Methods in Archaeology**

See Anthropology 185a for description. *Mr. Cowgill*

\* Not to be given in 1974-75.

- MEDITERRANEAN STUDIES 190a. Seminar on the Biographies of Muhammad**  
Seminar on the sources, style and development of the *Sirah*, the biographical writings about Muhammad.  
*Prerequisite:* Reading knowledge of Arabic. *Mr. Newby*
- MEDITERRANEAN STUDIES 191b. History and Sources of the Crusades**  
Seminar in the Crusades primarily through Arabic sources.  
*Prerequisite:* Reading knowledge of Arabic. *Mr. Newby*
- \*MEDITERRANEAN STUDIES 225. The Qur'an and its Commentaries**
- \*MEDITERRANEAN STUDIES 226. The Arabian Nights**
- \*MEDITERRANEAN STUDIES 227a. Advanced Arabic Prose**
- \*MEDITERRANEAN STUDIES 227b. Arabic Poetry**
- \*MEDITERRANEAN STUDIES 234. Akkadian Contracts, Letters and Diplomatic Texts**
- \*MEDITERRANEAN STUDIES 235. Sumerian**
- \*MEDITERRANEAN STUDIES 243. Advanced Egyptian**
- MEDITERRANEAN STUDIES 244. Coptic Language**  
This course is open to students of Egyptology and Early Christian literature.  
*Mr. Zabkar*
- MEDITERRANEAN STUDIES 303. Readings in Archaeology of Mesopotamia**  
*Mr. Todd*
- MEDITERRANEAN STUDIES 401—404. Dissertation Research**  
Independent research for the Ph.D. degree.
- |                        |                          |
|------------------------|--------------------------|
| 401. <i>Mr. Zabkar</i> | 403. <i>Mr. Todd</i>     |
| 402. <i>Mr. Newby</i>  | 404. <i>Ms. Morrison</i> |

\* Not to be given in 1974-75.



# MUSIC

## Objectives

The graduate program in Music, leading to the degrees of Master of Fine Arts and Doctor of Philosophy, is designed to provide a command of the craft of composition and an understanding of the nature, structural basis, and historical development of music.

Two general fields of study are offered in music:

1. *Musical Composition and Theory*. This program, emphasizing composition and studies in theory and analysis, leads to the degrees of Master of Fine Arts and Doctor of Philosophy.

2. *History of Music*. This program, emphasizing studies in musical history and analysis (the balance between the two is flexible and is determined individually by each student in consultation with the faculty), leads to the degrees of Master of Fine Arts and Doctor of Philosophy.

Students must specialize in one of these areas but are expected to acquire a background in both.

## Admission

Only a limited number of students will be accepted. The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

Applicants for study in musical composition and theory are required to submit, in addition to a transcript of their undergraduate records, evidence of qualification in the form of examples of original work in musical composition and advanced work in musical theory. Applicants for admission in the history of music should submit examples of their prose writing on music as evidence of their ability to handle the language and specialized vocabulary. Undergraduate theses or term papers will be satisfactory. History applicants wishing to specialize in analysis should also submit examples of advanced work in musical theory. This work should be submitted together with the formal application for admission.

All applicants are expected to have some proficiency at the piano or on an orchestral instrument. Information about this should be furnished when making formal application. A departmental written test in basic musicianship and analysis will be sent to all applicants; answers are to be submitted by mail on or before March 15.

Admission is granted for one academic year at a time. Students in residence must make formal application for readmission to the department between March 1 and March 15. Readmission will be refused in cases where students have not demonstrated a capacity for acceptable graduate work.

## Faculty

Professor ROBERT L. KOFF, *Chairman*; Professors ARTHUR BERGER, ††PAUL H. BRAINARD, HAROLD S. SHAPER, SEYMOUR J. SHIFRIN, LEO TREITLER; Associate Professors MARTIN BOYKAN, CALDWELL TITCOMB; Assistant Professors LOUIS S. BAGGER, †EDWARD COHEN, JOSHUA RIFKIN, DAVID ROSEN; Lecturers DAVID J. BOROS, JAMES D. OLESEN; Consultants MAYNARD GOLDMAN, FRED GOLDSTEIN, ELFRIEDA F. HIEBERT.

† On leave, 1974-75.

†† On leave, Fall Term, 1974-75.

## Degree Requirements

### Master of Fine Arts

#### *Language Requirements.*

Group A: French, German, Italian.

Group B: Spanish, Latin, Hebrew, Greek (and other languages at the discretion of the music faculty).

Candidates for the Master's degree in Musical Composition and Theory must possess a reading knowledge of one language from Group A.

Candidates for the Master's degree in History of Music must possess a reading knowledge of two languages in Group A.

Foreign language course credits will not in themselves constitute fulfillment of the language requirements for advanced degrees. All candidates must pass language examinations set or approved by the music faculty and offered periodically during the academic year. Students are urged to take these examinations at the earliest feasible date. In case of failure, an examination may be taken more than once.

*Instrumental Proficiency.* At least moderate proficiency at the piano is required of all candidates for advanced degrees.

*Residence Requirements.* Six full courses or the equivalent in half-courses at the graduate level, completed with distinction, and a thesis are required of all candidates.

The department normally allows credit for no more than one full course taken at another institution.

In general, the program of course work is completed in two academic years. It is suggested that students pursue no more than three full courses in any one year.

*Examinations.* Shortly after their arrival, new graduate students will be expected to take an examination in the standard literature of music from the early eighteenth century to the present. In cases of failure, examinations may be repeated.

Before the end of their second year of study, candidates for the degree of Master of Fine Arts must pass with distinction written general examinations in theory and history, one of which will be their major field, the other their minor field.

*Thesis.* Candidates for the degree of Master of Fine Arts in music are required to submit a thesis. For candidates in musical composition and theory, this will consist of a musical composition, its scope to be approved by the music faculty. For candidates in the history of music it will be an analytical or historical study on a topic acceptable to the music faculty. Candidates in the history of music may submit, in lieu of a separate thesis, revised copies of two seminar papers that have been certified by the seminar instructor and at least one other faculty member as demonstrating a high degree of competence in research and writing. Two copies of the thesis or composition must be submitted to the department chairman in final form no later than December 1 for a February degree or March 1 for a June degree.

### Doctor of Philosophy

*Residence Requirements.* A minimum of eight full courses or the equivalent in half-courses at the graduate level, completed with distinction, are required of all candidates.

In general, the program of course work will be completed in three academic years.

Applicants who have done graduate work elsewhere may apply for transfer of credit for such work; a maximum of one year of residence may be granted.

*Instrumental Proficiency.* At least moderate proficiency at the piano is required of all candidates.

*Language Requirements.* Candidates for the Doctor's degree in music must possess a reading knowledge of all three languages in Group A. In exceptional cases, the music faculty may accept a language in Group B in lieu of Italian. Subject to the approval of the department, candidates in composition and theory may substitute for the third language, courses in mathematics, physics, philosophy or other disciplines.

*Examinations.* Candidates will be expected to pass with unusual distinction the written general examination for the M.F.A. After meeting their language and residence requirements they must pass the special oral qualifying examination.

*Admission to Candidacy.* Students will be admitted to candidacy for the Ph.D. degree upon successful completion of the written and oral qualifying examinations, fulfillment of the language requirements, and the approval of a dissertation topic.

*Dissertation.* Candidates for the degree of Doctor of Philosophy in Musical Composition and Theory must submit an original musical composition and a thesis on a theoretical or analytical subject. Candidates for the degree of Doctor of Philosophy in History of Music must submit a dissertation on an historical or analytical subject. Two copies of the doctoral dissertation, as well as an abstract of the dissertation not to exceed six hundred words in length, should be submitted to the department or committee chairman no later than December 1 for a February degree and March 1 for a June degree of the academic year in which the Ph.D. degree is to be conferred.

Written dissertations should demonstrate the competence of the candidate as an independent investigator, his critical ability, and his effectiveness of expression. Upon completion of the dissertation the candidate will be expected to defend it in an oral examination.

## **Courses of Instruction**

Except in the rarest circumstances, graduate credit is not allowed for courses numbered below Music 165.

### **MUSIC 165b. Elementary Orchestration**

The instruments of the orchestra; their construction, ranges and playing techniques, with a consideration of their use by major composers; the methods of writing effectively for present-day instruments, individually and in combination; the mechanics of reading and writing a score.

*Mr. Titcomb*

### **\*MUSIC 168a. Renaissance and Baroque Keyboard Music**

### **MUSIC 171a. History of Music and Drama Criticism**

This seminar will deal with the various approaches, theoretical and practical, to the challenging task of writing about the two most important of the performing arts. The journalism of representative critics, past and present, will be discussed; the students will gain practical experience through the regular writing of play or concert reviews at the newspaper and superior-magazine level.

*Prerequisite:* Familiarity with music or theater.

*Mr. Titcomb*

### **MUSIC 180b. Ethnomusicology**

An introduction to the music of nonliterate peoples; to folk music, including that of the American Negro; and to the music of non-Western high cultures, with particular emphasis on India and Japan.

*Prerequisite:* Music 61 (or the equivalent) or a course in anthropology.

*Mr. Titcomb*

### **MUSIC 189b. Linguistics and Music Theory**

An approach to music theory based on Chomsky's approach to linguistic theory.

\* Not to be given in 1974-75.



The course will attempt to develop a notion of a musical generative grammar and discuss its implications for musical analysis, criticism, and composition.

*Prerequisite:* Designed for graduate students and undergraduates with some sophistication in music theory, but not necessarily with previous exposure to linguistics. Limited enrollment. Mr. Jackendoff

**MUSIC 194b. Problems in Cultural Historiography**

Readings and discussions concerning the conceptual foundations of historical study in the arts: the relation between history and criticism; the history and function of style-period concepts; evolutionary and developmental theories; modes of explanation in cultural history.

*Prerequisite:* Permission of instructor.

Mr. Treitler

**MUSIC 197aR. Tutorial in Music History and Literature**

Guided reading and research in the history and literature of music. Mr. Boros

**MUSIC 197bR. Tutorial in Musical Analysis**

Basic analytical problems of the music of the twentieth century, approached through detailed study of a few representative works. Mr. Berger

**MUSIC COLLOQUIUM**

Discussions of special topics led by the faculty and occasional guests. Some of the sessions will include performances of new works. Required of all graduate students. *Non-credit.* Staff and Visiting Lecturers

**MUSIC 200. Proseminar in Musicology**

A survey of the principal subject matters, problems, and techniques comprising the discipline of Musicology. *Messrs. Rifkin (Fall Term) and Brainard (Spring Term)*

**\*MUSIC 203a. Advanced Musical Analysis**

**MUSIC 221a. Seminar in the Music of the Middle Ages.**

Studies in the history of music from early Christian times through the end of the fourteenth century. Mr. Treitler

**MUSIC 222. Seminar in the Music of the Renaissance**

Studies in the history of music during the fifteenth and sixteenth centuries. *Music 221 and 222 will incorporate systematic studies in the musical notations of their respective times.* Mr. Rifkin

**\*MUSIC 223. Seminar in Baroque Music**

**\*MUSIC 224. Seminar in Pre-Classical and Classical Music**

**\*MUSIC 225. Seminar in Romantic Music**

**MUSIC 226. History of Western Music Theory**

A review of the recurring themes and issues of Western music-theoretical literature, from classical times to the end of the age of tonality. Selected writings will be studied in depth. Mr. Treitler

**MUSIC 227. Proseminar in Theory and Composition**

Technical projects in theory and composition; tonal forms and contrapuntal techniques.

*Required of all first-year graduate students in theory and composition except under special circumstances. May be repeated for credit with permission of the instructor.*

*Messrs. Shapero (Fall Term) and Berger (Spring Term)*

\* Not to be given in 1974-75.



**\*MUSIC 228. Seminar in Twentieth Century Techniques**

**\*MUSIC 233b. Topics in Analysis**

**\*MUSIC 246a. Stravinsky**

**\*MUSIC 265a. Advanced Orchestration**

**MUSIC 270. Seminar in Serial Music**

Detailed analysis of scores by Schoenberg, Webern, Boulez, Babbitt; methods of serial organization; relationship between serial procedures and general compositional problems such as phrase articulation and "harmonic movement."

*Mr. Boykan*

**MUSIC 292. Seminar in Composition**

Group meetings and individual conferences. Opportunities for the performance of student works will be provided.

*Messrs. Berger, Boykan, Shapero and Shiffrin*

**MUSIC 295a and b. Electronic Music**

Composition, notation and recording of electronic music. Technical electronics as they apply to musical problems.

*Mr. Shapero*

**MUSIC 299a and b. Individual Research and Advanced Work**

Individual research and advanced work in musical literature, musical history and in special problems of musical analysis, aesthetics, theory and criticism.

*Staff*

**MUSIC 400—410. Dissertation Research**

*Required of all doctoral candidates.*

400. *Mr. Berger*

406. *Mr. Treitler*

401. *Mr. Boykan*

407. *Mr. Bagger*

402. *Mr. Brainard*

408. *Mr. Cohen*

403. *Mr. Shapero*

409. *Mr. Rifkin*

404. *Mr. Shiffrin*

410. *Mr. Rosen*

405. *Mr. Titcomb*

**Electronic Music Studios**

Two studios with facilities for the composition of electronic music are available to qualified student composers.

*Director: Mr. Shapero*

\* Not to be given in 1974-75.

# NEAR EASTERN AND JUDAIC STUDIES

## Objectives

The graduate program in Near Eastern and Judaic Studies, leading to the Master of Arts and Doctor of Philosophy degrees, is designed to train scholars and teachers in the various cultures of the Near East and of the classical and modern Judaic civilization, and to do further research in these areas. This work is done mainly through study of the relevant languages and literatures and interpretation of historical sources.

## Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this department.

## Faculty

Professor NAHUM M. SARNA, *Chairman*: Biblical studies. Dead Sea Scrolls.

Professor ALEXANDER ALTMANN: History of Jewish philosophy and mysticism. Medieval philosophy. Classical Bible commentaries.

Professor NAFTALI C. BRANDWEIN: Modern Hebrew literature.

Professor MARVIN FOX: Jewish thought.

Professor Emeritus NAHUM NORBERT GLATZER: Jewish history. Literature of the Second Commonwealth. Hebrew historiography. Eschatology.

Professor BENJAMIN HALPERN: Modern Near East history. Political and social history of Palestine and Israel. Modern Jewish history.

Professor MARSHALL SKLARE: Sociology of the Jewish community.

Professor DWIGHT W. YOUNG: Ancient Near Eastern civilization. Assyriology. Ugaritic. Biblical studies.

Visiting Professor JONAS B. GREENFIELD: Judaica.

Associate Professor LEON A. JICK: Contemporary Jewish history.

Assistant Professor ROBERT M. DANKOFF: Arabic. Islamic studies. Turkish.

† Assistant Professor MICHAEL FISHBANE: Hebrew and Biblical studies.

Assistant Professor ARIELLA T. GOLDBERG: Hebrew.

Assistant Professor BENJAMIN C. I. RAVID: Jewish history.

Assistant Professor BERNARD REISMAN: Jewish communal service.

Assistant Professor SAUL P. WACHS: Jewish education.

Lecturer JOSHUA.ROTHENBERG: Yiddish.

## Program of Study

Among the main fields in the area of Near Eastern and Judaic Studies in which courses are being given in the Graduate School are:

Semitic Languages and Literatures (Akkadian, Arabic, Aramaic, Egyptian, Hebrew, Syriac).

History of Ancient Near East.

Islamic Studies.

Biblical Studies.

Jewish History.

Medieval Jewish Philosophy and Mysticism.

† On leave, 1974-75.

Jewish Thought.  
The Modern Near East.  
Contemporary Jewish Studies.

Fields of study not listed here may be approved.

## **Degree Requirements**

### **Master of Arts**

*Residence Requirements.* The student is required to complete four full courses in the department. Programs of study are kept flexible; the department will consider the needs and interests of each student and advise in outlining a program of study—this program may be modified later by the department. Students may be required to take courses given by the other departments. A student who can, on admission, give evidence of satisfactory competence in one Semitic language or in one particular field of Near Eastern and Judaic Studies, will be able to complete the program for his or her degree in one year. Additional resident study may be required of less advanced students.

*Language Requirements.* Every candidate for the Master of Arts degree must show proficiency in one Semitic language, and in French or German. In special cases, another modern foreign language may be substituted for one of the two listed here. The foreign language requirements are to be satisfied by examination not later than eight weeks before a candidate is to receive the degree.

*Examination.* An oral examination is given at the conclusion of the student's residence. The examination is designed to test the student's knowledge in various subjects of Judaica as well as an ability to relate information to the large area to which those subjects belong. A student who fails to pass the examination, or any part of it, may apply for re-examination, which will take place not earlier than one semester after the date of the first examination.

*Thesis.* In certain cases, the student is advised to write a thesis which must be submitted no later than May 1 of the year in which the degree is to be conferred. In such cases, the student registers in the Dissertation Colloquium (NEJS 400) which then counts as one of the required four courses.

### **Doctor of Philosophy**

*Residence Requirement.* The residence normally required of a Ph.D. student who is the holder of an M.A. degree is one year (four courses); a longer residence will be required for part-time students and students holding teaching assistantships. The main emphasis, however, is placed on the student's individual research.

*Language Requirements.* A candidate for the Doctor of Philosophy degree in this area must show proficiency in two Semitic languages and in two modern foreign languages, as required by the candidate's special field of research. The candidate must satisfy the language requirements no later than at the completion of the required residence in the Graduate School.

*Examinations.* A written or an oral comprehensive examination in three areas of study (the scope being determined at a conference with the examining board) is given at the conclusion of the student's residence. A student who fails to pass the examination, or any part of it, may apply for a re-examination, which will take place not earlier than one semester after the date of the first examination.

*Admission to Candidacy.* A student registered for studies leading to the Ph.D. degree becomes a candidate for that degree upon fulfillment of the residence requirements,

when the subject and synopsis of his or her dissertation have been accepted by the department, when he or she has passed the comprehensive examinations, and fulfilled the language requirements.

*Dissertation and Defense.* The student will discuss plans for a dissertation with the chairman of the department and the dissertation supervisor. The conferences on the planning and the program of the dissertation take place in the Dissertation Colloquium (NEJS 400), a course in which the candidate is to register. Normally, the candidate will continue working on the dissertation after the completion of residence, i.e., as a non-resident student. The dissertation must demonstrate the candidate's thorough knowledge of the field and competence in independent research, and must constitute an original contribution to knowledge. Two copies of the dissertation, one of which must be the original typescript, are to be deposited in the office of the department chairman not later than April 1 of the year in which the candidate plans to take the degree. A defense of the dissertation will be held.

## **Courses of Instruction**

### **NEJS 100a. History of Medieval Arabic Culture**

See Mediterranean Studies 171bR for description.

*Mr. Newby*

### **NEJS 101. Beginning Classical Arabic**

See Mediterranean Studies 125 for description.

*Mr. Newby*

### **NEJS 102. Intermediate Arabic**

Study of advanced grammatical and syntactical forms. Reading of related classical and modern texts. Drills in pronunciation and composition.

*Prerequisite:* NEJS 101 or its equivalent.

*Mr. Dankoff*

### **NEJS 103a. Introduction to Islamic Civilization and Institutions**

Islam as a religion and a way of life. This course will examine systematically the following topics: the message (Koran) and the messenger (Muhammad); the straight path (Sunnah) and the divergent path (Shia); Islamic law, theology, and mysticism; popular Islam; Islamic modernism.

*Mr. Dankoff*

### **NEJS 103b. Introduction to Islamic Civilization and Institutions**

Dynastic and governing institutions of the Islamic Near East. This course will examine the classical political tradition of the Near East, beginning with the pre-Islamic Sassanian and late Roman imperial systems, and the absorption and modification of this tradition by Islam.

*Mr. Dankoff*

### **NEJS 104b. Aramaic Dialectology**

A study of the Aramaic portions of the Bible, and the contemporary Aramaic documents from Egypt with emphasis on grammar, and comparative and historical considerations.

*Mr. Greenfield*

### **NEJS 108b. Comparative Grammar of Semitic Languages**

A study of phonology and morphology, utilizing pertinent Egyptian data, with special reference to problems in Biblical Hebrew.

*Mr. Young*

### **NEJS 110a. Problems in Biblical History**

An intensive examination of crucial periods in the history of ancient Israel. Extra-biblical materials will be correlated with selected classical Hebrew texts.

*Prerequisite:* A reading knowledge of Hebrew.

*Mr. Young*

**NEJS 113. Targum**

A study of selections from Targumic literature including the newly discovered Palestinian materials. Critical study of the sources and their place among early Bible versions and exegesis. *Mr. Greenfield*

**NEJS 115a. Biblical Literature of the Early Post-Exilic Period**

The prophetic and historiographic literature of the period will be examined in the light of the historical background and social and religious conditions.

*Prerequisite:* Fluency in Hebrew.

*Mr. Sarna*

**NEJS 116b. The Problem of Evil in Jewish Philosophy**

A systematic analysis of the main treatments of the problem of evil beginning with Philo and moving through the main figures in the history of Jewish philosophy. *Mr. Fox*

**NEJS 123bR. Classical Biblical Commentaries**

Selected texts from the French and Spanish school of Jewish commentators on the prophets and hagiographa. *Mr. Altmann*

**NEJS 125b. Selected Texts from Genesis Rabba**

A study of the earliest documents of Midrashic speculation on cosmological and kindred problems. Tracing of Hellenistic, especially Gnostic sources. *Mr. Altmann*

**NEJS 133a. Medieval Jewish Philosophy: The Early Phase (Kalam)** *Mr. Altmann*

**NEJS 133b. Yahuda HaLevi's *Sefer HaKuzari***

Analysis of selected passages in the new Hebrew translation. *Mr. Altmann*

**NEJS 139a and b. Modern Hebrew Literature: The Jew and his Realia**

An analytical study in the development of themes, motifs, milieu, ideas and structure in modern Hebrew prose and poetry, with emphasis on the Jew and his realia as reflected in this literature. The course will be based on the short stories of I. D. Berkovitz, S. Y. Agnon and others in prose; and on D. Shimony, A. Gilboa and others in poetry.

*Prerequisite:* Hebrew 10 or the equivalent.

*Mr. Brandwein*

**NEJS 140. The Jews in Europe to 1700**

An examination of the phenomenon of Jewish survival in the European diaspora. Attention will be paid to the Jewish religious tradition and cultural expression, the structure of the Jewish community, the attitude of the church and the state toward the Jew, and the role of the Jew in the community. *Mr. Ravid*

**NEJS 145b. The Origins of Near Eastern Nationalism**

The impact of Western models upon Egypt and Turkey and the background of Arab nationalism from 1800 to 1920. *Mr. Halpern*

**NEJS 160a. The American Jewish Experience, 1654-1885**

See CJS 160a for description.

*Mr. Jick*

**NEJS 160b. The Emergence of the American Jewish Pattern, 1880 to the Present**

See CJS 160b for description.

*Mr. Jick*

**NEJS 161a. American Jewish Life and Institutions**

A survey of the contemporary community and the diverse forms of Jewish identification which characterize American Jewish life. Reform, Conservative, and Orthodox Judaism; problems of Jewish family life including intermarriage; problems of relationship to the general society and to other ethnic groups.

*Mr. Sklare*

**NEJS 163a. The Sociology of the American Jew**

The individual, the in-group, and the majority society; minority group personality development; the Jewish family; patterns of self-segregation; acculturation and assimilation; religion in American society and in the life of the individual Jew. *Mr. Sklare.*

**NEJS 164b. The Sociology of the American Jewish Community**

The role of the subcommunity in American society; Jewish communal services in medieval and modern times; contemporary American Jewish communal forms; religion, community relations, overseas aid, social welfare, and relationships with Israel. *Mr. Halpern*

**NEJS 166a. Modern Jewish Intellectual History to 1870**

Jewish ideologies and movements until the rise of political anti-Semitism. *Mr. Halpern*

**NEJS 168a. The Culture of East European Jewry**

A survey of social and ideological trends and an introduction to the literature and folklore of East European Jewry. *To be announced*

**NEJS 169a. The Destruction of European Jewry**

The function of anti-Semitism in the comparative history and politics of Nazism; the Holocaust organization and the victims' responses; Allied policies and Western reactions; post-war punishment and reparations. Interdisciplinary approaches to historical sociology and legal philosophy will be applied. Lectures, discussions and colloquia. *Mr. Halpern*

**NEJS 171b. Trends and Values in Yiddish Literature**

A study (in English) of the major lines of development from the folk literature of the sixteenth century to the contemporary short story, novel, essay and poem. *To be announced*

**NEJS 173b. Seminar in Yiddish Literature: Contemporary Poetry**

Among the poets whose work will be studied are Glatstein, Grade, Manger, J. I. Segal, Sutzkever and Zeitlin. *To be announced*

**NEJS 210a. Seminar in American Jewish History**

Evolving institutional patterns in the American Jewish experience. *Mr. Jick*

**NEJS 210b. Seminar in American Jewish History**

Ideologies of acculturation and of Jewish continuity in America. *Mr. Jick*

**NEJS 223a. The Dead Sea Scrolls**

To be read in the original, with special attention to the historical background, religious teachings and social organization of the sect. Linguistic features will be emphasized. A seminar. *Mr. Greenfield*

**NEJS 224b. History of the Biblical Canon and Ancient Versions**

Intended primarily for graduate students majoring in Biblical studies. *Prerequisite:* Ability to read rabbinic texts. *Mr. Sarna*

**NEJS 226. Akkadian Texts from the West**

Selected texts from Amarna, Alalakh, Ugarit and Mari. *Mr. Young*

**NEJS 229a. Readings in Medieval Arabic: Philosophical and Theological Texts**

*Prerequisite:* Intermediate Arabic. *Mr. Dankoff*

**NEJS 229b. Introduction to Arabic Poetry**

*Prerequisite:* Intermediate Arabic.

*Mr. Dankoff*

**NEJS 239a and b. Conflict of Ideas in Modern Hebrew Literature**

A critical study of the major streams and trends in Modern Hebrew poetry and prose, by means of analysis of structure, themes, ideas and milieu; with emphasis on parallel motifs in European literature. The course will be based mainly on the works of Micha Yosef Levensohn, Y. L. Gordon, H. N. Bialik and S. Tchernichovsky in poetry; and S. Y. Agnon and H. Hazaz in prose.

*Mr. Brandwein*

**NEJS 258b. Studies in Eschatological Theories**

Messianic and Apocalyptic concepts in the Old Testament prophets. Apocrypha and the Dead Sea writings in post-Biblical Judaism and early Christianity; Messianic movements in the Middle Ages.

*Mr. Greenfield*

**NEJS 260. Philosophical Foundation of Jewish Ethics**

A study of major theories of Jewish ethics as they emerge from rabbinic thought and the works of the Jewish philosophers up to recent times.

*Mr. Fox*

**NEJS 262b. Problems in the Sociology of the American Jew**

A seminar. Analysis of selected research studies in American Jewish life and problems. Studies range from those dealing with the immigrant ghetto to studies of contemporary suburbia.

*Mr. Sklare*

**NEJS 265. Topics in Freemancipation Jewish History**

An introduction to the main monographic literature and central problems in the history of the Jews in Europe to the seventeenth century. Special attention to techniques of archival research.

*Prerequisites:* NEJS 140 or equivalent. Fluent reading knowledge of Hebrew and one romance language.

*Mr. Ravid*

**NEJS 320—334. Reading Courses**

Special tutorials for advanced graduate students.

**320a and b. Readings in Medieval Jewish History**

*Mr. Ravid*

**322a and b. Readings in Medieval Jewish Philosophy**

*Mr. Altmann*

**323a and b. Readings in Kabbalah**

*Mr. Altmann*

**324a and b. Readings in Modern Hebrew Literature**

*Mr. Brandwein*

**325a and b. Readings in Biblical Texts**

*Mr. Sarna*

**326a and b. Readings in Islamic Civilization**

*Mr. Dankoff*

**327a and b. Readings in Ancient Near Eastern Civilization**

*Mr. Young*

**328a and b. Readings in Syriac Literature**

*Mr. Young*

**329a and b. Readings in Modern Near East and Modern Jewish History**

*Mr. Halpern*

**330a and b. Readings in the Sociology of the Jewish Community**

*Mr. Sklare*

**331a and b. Readings in Yiddish Literature**

*To Be Announced*

**332a and b. Readings in American Jewish History**

*Mr. Jick*

**333a and b. Readings in Jewish Thought**

*Mr. Fox*



**NEJS 400—408. Dissertation Colloquium**

Independent research for the Ph.D. degree.

- |                           |                        |
|---------------------------|------------------------|
| 400. <i>Mr. Altmann</i>   | 405. <i>Mr. Sarna</i>  |
| 401. <i>Mr. Brandwein</i> | 406. <i>Mr. Sklare</i> |
| 402. <i>Mr. Fox</i>       | 407. <i>Mr. Young</i>  |
| 404. <i>Mr. Halpern</i>   | 408. <i>Mr. Jick</i>   |

**PHILOSOPHY AND HISTORY OF IDEAS**

**Faculty**

Professor PETER DIAMANDOPOULOS, *Chairman*: History of ancient philosophy. History of science.

Professor HENRY D. AIKEN: Ethics. American philosophy. Social philosophy.

Professor ALEXANDER ALTMANN: History of Jewish philosophy and mysticism. Medieval philosophy.

Professor WILLIAM A. JOHNSON: Philosophy of religion. History of religious thought. Ethics.

†Professor GEORGE A. KELLY: Political philosophy. History of eighteenth and nineteenth century social and political thought.

Professor FREDERIC T. SOMMERS: Philosophy of language. Metaphysics. History of philosophy.

Professor JOHN VAN HEIJENOORT: Logic. History of logic. Foundations of mathematics.

Professor MORRIS WEITZ: Philosophy of art and literature. Analytical philosophy.

Associate Professor ROBERT S. GREENBERG: Theory of knowledge.

Assistant Professor GERALD N. IZENBERG: Intellectual history. History of social and political thought. History of nineteenth century social and philosophical movements.

Associate Professor RAY S. JACKENDOFF: Linguistics. Philosophy of language.

Lecturer IGAL KVART: Philosophy of science. Philosophy of logic. Philosophy of language.

Lecturer RICHARD M. BURIAN: Philosophy of science.

**PHILOSOPHY**

**Objectives**

The graduate program in Philosophy is designed to prepare students for careers in philosophy as scholars and teachers. It places traditional emphasis on logic, epistemology, metaphysics, value theory and the history of philosophy. The number of students admitted to the program is small and the most important part of a student's work is done in small seminars and tutorials under close faculty supervision.

**Admission**

In addition to the general requirements for admission to the Graduate School as specified in an earlier section of this catalog, applicants for admission to the graduate

† On leave, 1974-75.

program in Philosophy should have had at least one year of history of philosophy and at least one course in logic. The department requires that applicants submit a sample of written work with their applications.

## **Degree Requirements**

All programs will be worked out in consultation with the student's adviser.

### **Master of Arts**

Generally only candidates for the Ph.D. degree are accepted, although in some cases an M.A. degree will be awarded upon satisfactory completion of the following requirements:

1. One year's residence as a full-time student.
2. Successful completion of a prescribed schedule of courses.
3. Passing the qualifying examination.
4. Demonstration of proficiency in either French *or* German.

### **Doctor of Philosophy**

The degree requirements for the Ph.D. degree are as follows:

1. Residence as a full-time student for two years.
2. Successful completion of a prescribed schedule of courses.
3. Passing the qualifying examination with distinction.
4. Demonstration of proficiency in either French *or* German; and in any additional language needed for advanced work in the student's area of specialization.
5. Admission to candidacy.
6. Submission of a doctoral dissertation approved by the department.
7. Successful defense of the dissertation.

*Program of Study.* Students will be assigned a tutor who will advise on the course of study and guide them in preparation for the qualifying examinations. First year students are required to take the pro-seminar in philosophy (Philosophy 200) and six additional semester courses, four of which must be within the Philosophy Department. Second year students are required to take two semester courses from the 200 series and six additional semester courses. The student is also encouraged to take some work in a field other than philosophy that is related to his area of concentration. Such work may be taken in the first or second year and will count toward the fulfillment of the residence and course requirements for the Ph.D. It must have the prior approval of the student's adviser and the department chairman. A second year student may not take more than two semester reading courses in the 300 series; these must also be approved by the adviser and the department chairman.

*Qualifying Examination.* The qualifying examination is given each September, and the student is required to take it at the end of the first full year of residence. A single comprehensive test will be set, divided historically into three periods: (1) up to A.D. 1500, (2) 1500-1870, (3) since 1870. In addition, there will be an examination on logic, based on Philosophy 115a and 130aR. Candidates are, however, expected to use the examination as an occasion for dealing with the questions raised in an analytical manner, and for developing ideas of their own, rather than for repeating factual information about the history of philosophy. Credit will accordingly be given for analytical power and for original ideas, as much as for a grasp of the historical points at issue.

For each historical period, set books will be named early in the academic year preceding the examination. Candidates are required to show general familiarity with the development of philosophy in each of the three periods. Three texts will be named for

each period, covering a range of topics in (e.g.) metaphysics, epistemology, ethics and social philosophy. Specialized texts will occasionally be named, without prejudice to candidates concentrating in other areas of philosophy. All examinations must be passed with distinction within 30 months of initial enrollment in order to qualify for the Ph.D. degree. No examination may be taken more than twice.

*Language Requirement.* A proficient reading knowledge of either French or German is required. A student must take an examination in either language by the spring term of the first year in residence and must meet the language requirement no later than the beginning of the fifth term in residence. Language examinations will be given early in the fall and spring terms. The department reserves the right to establish additional language requirements when necessary for a student's doctoral research.

A student whose further work requires the use of an additional language must first demonstrate proficiency in that language.

*Admission to Candidacy.* A student may be admitted to candidacy for the Ph.D. degree when he or she has completed the residence requirement, has passed with distinction all of the qualifying examinations, has fulfilled the language requirements and when the subject of the dissertation has been approved by the department.

*Dissertation Topic Oral Examination.* To meet the final requirement for admission to candidacy, a student must have departmental approval of a thesis prospectus and must pass with distinction an oral examination in the general area of his or her proposed topic.

*Dissertation and Defense.* When a student has been admitted to candidacy, the department chairman will appoint a dissertation adviser and a dissertation committee. The dissertation will be written under the supervision of this committee and when it has been read and accepted by the committee a final oral examination will be scheduled wherein the candidate will defend the dissertation.

## HISTORY OF IDEAS

### Objectives

The program in the History of Ideas leads to the degree of Doctor of Philosophy in the History of Ideas. It is designed to give students a broad understanding of the historical development of ideas in several fields of thought, together with thorough training in the history of one of those fields. In practical terms, it prepares students, variously, for teaching and research in intellectual history and for historically-oriented teaching and research in philosophy and social science.

The program treats past thought systematically as well as historically, and is essentially interdisciplinary in character. The endeavor throughout is to examine the genesis of intellectual positions within a complex socio-historical matrix, the interrelation between theoretical and practical activities, and the role of ideas in human affairs.

A student trained in the program is expected to acquire a good general grasp of the theoretical and methodological problems involved in the comparative historical study of ideas, and of the general and intellectual history of a given period. The student is expected also to attain special competence in dealing systematically as well as historically with any one field of thought (philosophical, scientific, social) within the period of chronological concentration, and with the classic texts of that field as a whole. Finally, students are expected to acquire a competent knowledge of some branch of an external subject related to their special interests (for example, in philosophy: epistemology, philosophy of science, or social and political philosophy; in histo-

ry: a period of national history or a category of comparative history; in sociology: political sociology, sociology of literature, or social psychology).

## Admission

In addition to the general requirements for admission to the Graduate School specified in an earlier section of this catalog, applicants who propose to specialize in the History of Philosophical Thought should normally present an undergraduate major in philosophy, together with evidence of adequate preparation in history or one of the social sciences; applicants who propose to specialize in the History of Scientific Thought should normally present *either* an undergraduate major in a natural science, together with evidence of adequate previous experience in history and philosophy *or* an undergraduate major in history or philosophy, together with evidence of adequate previous experience in a natural science; applicants who propose to specialize in the History of Social Thought should normally present an undergraduate major in history, philosophy, or one of the social sciences. The department requires that applicants submit a sample of written work with their application.

## Degree Requirements

### Master of Arts

In principle, only applicants for the Ph.D. program are accepted. There is no M.A. program as such. However, the M.A. degree will be awarded upon completion of the following requirements:

1. One year of residence as a full-time student.
2. Successful completion of a prescribed course of study.
3. Demonstration of proficiency in Latin, French or German.
4. Submission, by April 15, of an acceptable, substantial, scholarly paper written during the course of the year.

### Doctor of Philosophy

The requirements for the Ph.D. degree are as follows:

1. Two years of residence as a full-time student.
2. Successful completion of a prescribed course of study.
3. Demonstration of proficiency in two of the following languages: Latin, French, German; and in any additional language needed for advanced work in the student's area of specialization.
4. Submission, by April 15 of the student's first year of residence, of an acceptable, substantial, scholarly paper written during the course of the year.
5. Passing the Qualifying Examinations with distinction.
6. Admission to candidacy.
7. Submission of a doctoral dissertation approved by the department.
8. Successful defense of the dissertation.

*Program of Study.* Each student will plan his and her program of study in consultation with the adviser.

*Language Requirements.* A proficient reading knowledge of two of the following languages is required: Latin, Greek, French, German, Italian, Spanish. A student whose further work requires the use of an additional language must first demonstrate proficiency in that language. Students are expected to pass the examination in at least one of the two required languages in their first year of residence, the other in the second year.

*Qualifying Examinations.* The Qualifying Examinations are to be taken toward the end of the second or at the beginning of the third year of graduate study, and in no case later than the end of the third year. The form of the examinations—written, oral, “take-home,” etc.—is decided by the student in consultation with his or her adviser. The examinations will cover:

1. The History of a Field of Thought within that Period.
2. The General History of that Field, with emphasis on the classics thereof.
3. The Intellectual History of that Period.
4. An External Subject.

The requirements in the External Subject may be and is usually met by completing with distinction two courses in that subject.

*Admission to Candidacy.* A student may be admitted to candidacy for the Ph.D. degree upon completion of the requirements as to residence, study, language proficiency, paper, qualifying examinations, and when the subject of the dissertation has been approved by the department. Such approval depends, in part, upon the student’s passing with distinction, an oral examination in the general area of his or her proposed topic.

*Dissertation and Final Oral Examination.* Once a student has been admitted to candidacy for the Ph.D. degree, the department chairman will appoint a dissertation adviser and a dissertation committee. The dissertation will be written under the supervision of the adviser. It will be read by the committee, and by such external readers as the committee may wish to consult. When the dissertation has been accepted, the candidate will defend it in a final oral examination.

## **Courses of Instruction**

### **PHILOSOPHY 150a. Plato**

An introduction to Plato’s thought through an intensive reading of several major dialogues.  
*Mr. Diamandopoulos*

### **PHILOSOPHY 105b. Aristotle**

An introduction to Aristotle’s thought through an intensive reading of some selected treatises.  
*Mr. Sommers*

### **PHILOSOPHY 106b. The Problem of Evil in Jewish Philosophy**

See NEJS 116b for description.  
*Mr. Fox*

### **PHILOSOPHY 107a. Medieval Jewish Philosophy: The Early Phase (Kalam)**

See NEJS 113a for description.  
*Mr. Altmann*

### **PHILOSOPHY 113b. Aesthetics**

Intensive study of some major concepts and issues in the criticism and history of the various arts: expression, genre, style, meaning, symbolism, interpretation, evaluation.  
*Mr. Weitz*

### **PHILOSOPHY 115a. Intermediate Logic**

Propositional calculus. Quantification theory. Satisfiability and validity.  
*Mr. van Heijenoort*

### **PHILOSOPHY 116b. History of Modern Ethical Theory**

A study of major moral philosophers in the modern period with special attention to Hume, Kant, Bentham, Mill and Bradley.  
*Mr. Aiken*

### **\*PHILOSOPHY 117aR. Ethical Theory in the Twentieth Century**

\* Not to be given in 1974-75.

**PHILOSOPHY 119a. Theory of Knowledge**

The problem of knowledge will be discussed from a variety of standpoints: concepts and precepts, comparative logic, the psychology and neurophysiology of cognition, the historical development of conceptual traditions. *Mr. Burian*

**PHILOSOPHY 121b. Foundations of Mathematics**

Formal systems. Godel's theorems and consequences. Consistency proofs. Introduction to the theory of recursive functions. Hilbert's program and institutionism. *Mr. van Heijenoort*

**PHILOSOPHY 124b. Concepts: Their History and Variety**

A survey of the major historical theories of concepts and conceptualization with special emphasis on their relevance to contemporary theories of the nature and role of concepts in human culture. *Mr. Weitz*

**PHILOSOPHY 128b. Oriental Philosophies**

An examination of several Indian, Chinese and Japanese philosophies which analyze traditional problems of the nature of man, transcendence, moral commitment, the afterlife and human redemption. *Mr. Johnson*

**PHILOSOPHY 130a. Philosophy of Logic**

An examination of the fundamental notions of logic. Signs and symbols. Sentences, statements, and propositions. Negation, implication, deductibility, logical consequence. Theory of descriptions. The relation of formalized logic to ordinary language. *Mr. van Heijenoort*

**PHILOSOPHY 133b. Contemporary Analytic Philosophy**

A critical survey of leading men and movements in recent British and American philosophy. *Mr. Greenberg*

**PHILOSOPHY 134a. The Continental Existentialists**

A consideration of selective topics from the works of Nietzsche, Kierkegaard, Heidegger, Jaspers, Sartre and Camus. *Mr. Diamandopoulos*

**PHILOSOPHY 135a. Philosophy of Literature**

Philosophical problems as reflected in classics of literature, such as the Greek dramatists, Shakespeare, Voltaire, Tolstoy, T. S. Eliot and Proust. *Mr. Weitz*

**PHILOSOPHY 140b. Philosophy of Science**

A critical discussion of major issues in the philosophy of science, including explanation, confirmation, scientific laws and theories and special problems of the social sciences. *Mr. Kvat*

**PHILOSOPHY 142a. Philosophy of Law**

The course will examine key concepts in the law, such as causality, responsibility, risk, negligence and punishment. Discussions will deal with the moral foundations, ethical implications and the conceptual structure of legal systems. *Mr. Kvat*

**\*PHILOSOPHY 143a. Continental Rationalism**

**\*PHILOSOPHY 143b. British Empiricism**

**\*PHILOSOPHY 145b. Human Action**

**PHILOSOPHY 147a. American Pragmatism**

A study of major writings of the principal American pragmatists including C. S. Peira, William James and John Dewey. *Mr. Aiken*

\* Not to be given in 1974-75.

**\*PHILOSOPHY 148b. Philosophy of Social Sciences**

**PHILOSOPHY 150aR. Wittgenstein**

Intensive study of the *Tractatus* with an examination of other works. *Mr. Burian*

**\*PHILOSOPHY 151a. Social and Political Philosophy**

**PHILOSOPHY 152b. Philosophy of History**

A study of leading problems in the theory of history; relativism, determinism, explanation, and objective historical knowledge. Analysis of several leading philosophers of history: Vico to Collingwood. *Mr. Diamandopoulos*

**PHILOSOPHY 156b. Philosophy of Mind**

An examination of selected current topics, including the concept of willing, intentionality, and the mind-body problem. *Mr. Aiken*

**PHILOSOPHY 157a. Philosophy of Language**

Nature and uses of language, theories of meaning, and prediction. *Mr. Kvat*

**PHILOSOPHY 158a. Experience, Substance and Identity**

An analytical investigation of certain problems in the area of metaphysics. Reference will be made to traditional as well as contemporary philosophers. Discussion will focus on the role of experience in the resolution of problems.

*Mr. Sommers*

**PHILOSOPHY 167a. Kant**

A contemporary analytic approach to certain problems in the *Critique of Pure Reason*. *Mr. Greenberg*

**PHILOSOPHY 200. Pro-Seminar**

*Required of all first year students.*

*Staff*

**PHILOSOPHY 203a. Seminar in Greek Philosophical Thought: Plato's**

**Later Dialogues**

*Mr. Diamandopoulos*

**\*PHILOSOPHY 203b. Seminar in Rationalism: Spinoza's Political Treatises**

**PHILOSOPHY 215b. Advanced Topics in Logic**

Introduction and modal logic.

*Mr. van Heijenoort*

**PHILOSOPHY 235a. Seminar on Truth**

The logical issues surrounding the concept of truth. Readings in contemporary philosophers including Frege, Takshi, Quine, Kripke and Strawson. *Mr. Sommers*

**PHILOSOPHY 260. Philosophical Foundations in Jewish Ethics**

See NEJS 260 for description.

*Mr. Fox*

**PHILOSOPHY 300—307. Readings in Philosophy**

300a and b. *Mr. Aiken*

304a and b. *Mr. Sommers*

301a and b. *Mr. Burian*

305a and b. *Mr. van Heijenoort*

302a and b. *Mr. Diamandopoulos*

306a and b. *Mr. Weitz*

303a and b. *Mr. Greenberg*

307a and b. *Mr. Kvat*

**PHILOSOPHY 322a and b. Readings in Medieval Jewish Philosophy**

See NEJS 322a and b for description.

*Mr. Altmann*

\* Not to be given in 1974-75.

**PHILOSOPHY 400—407. Dissertation Research**

Independent research for the Ph.D. degree.

400. Mr. Aiken

404. Mr. Sommers

401. Mr. Burian

405. Mr. van Heijenoort

402. Mr. Diamandopoulos

406. Mr. Weitz

403. Mr. Greenberg

407. Mr. Kvart

**HISTORY OF IDEAS 200. Introduction to the History of Ideas**

Exploration of various approaches to the history of ideas, and the underlying theoretical problems.

*Required of all first-year students.*

*Staff*

**HISTORY OF IDEAS 102a. Roman History**

See Classics 102a for description.

*Mr. Higgins*

**HISTORY OF IDEAS 102b. Pagan and Christian Art and Thought in the Late Empire**

See Classics 102b for description.

*Mr. Higgins*

**HISTORY OF IDEAS 109a. History of Science in the Second Half of the Nineteenth Century**

See Physics 137a for description.

*Mr. Schweber*

**HISTORY OF IDEAS 110b. The Sociology of Knowledge**

See Sociology 110b for description.

*Mr. Wolff*

**HISTORY OF IDEAS 125a. Major Figures of the Christian Tradition**

An investigation of a number of major thinkers of the Christian theological tradition, including St. Paul, Augustine, Thomas, Luther and Schleiermacher. Special attention will be given to primary source materials.

*Mr. Johnson*

**HISTORY OF IDEAS 125b. Modern Religious Thought**

An examination of several thinkers of the Jewish-Christian faith tradition, including Kierkegaard, Buber, Tillich, Barth, Teilhard du Chardin. Attention will be given to methodological problems, particularly as philosophy relates to theology.

*Mr. Johnson*

**HISTORY OF IDEAS 126bR. Religion and Its Conceptual Setting**

A critical study of different methodological approaches to the study of religious, anthropological, sociological, psychological, psychoanalytic and phenomenological doctrines with particular reference to nineteenth and twentieth century thinkers. A discussion of the nature of religious experience, religious practice and beliefs.

*Mr. Johnson*

**HISTORY OF IDEAS 126aR. Special Problems in the Philosophy of Religion**

An historical and philosophical inquiry into the concept of transcendence.

*Mr. Johnson*

**HISTORY OF IDEAS 130a. Humanism in Europe**

See History 121a for description.

*Mr. Berkowitz*

**HISTORY OF IDEAS 130b. The Reformation**

See History 123b for description.

*Mr. Berkowitz*



- HISTORY OF IDEAS 135aR. European Socialism since Babeuf**  
See History 135aR for description. *Mr. Binion*
- HISTORY OF IDEAS 136b. Topics in Historical Jurisprudence: The English System of Law**  
See History 124b for description. *Mr. Berkowitz*
- HISTORY OF IDEAS 137b. Yahuda HaLevi's *Sefer HaKuzari***  
See NEJS 133b for description. *Mr. Altmann*
- HISTORY OF IDEAS 144a. The Intellectual History of Europe, 1890-1930**  
See History 132a for description. *Mr. Izenberg*
- HISTORY OF IDEAS 144b. The Intellectual History of Contemporary Europe, 1930-1970**  
See History 132b for description. *Mr. Izenberg*
- HISTORY OF IDEAS 148b. The Problem of Authenticity**  
This course will be concerned with the attempts of Heidegger and Sartre to develop a concept and an ethic of authenticity—being oneself; their efforts to translate that ethic into political and historical terms; the difficulties encountered and the resolutions at which they arrived. *Mr. Izenberg*
- HISTORY OF IDEAS 162b. Justice and the City**  
See Classics 162b for description. *Mr. Higgins*
- HISTORY OF IDEAS 163a. The Study of Revolution: Marx to Mao**  
See Politics 163a for description. *Mr. Grow*
- HISTORY OF IDEAS 182bR. Political Thought from Machiavelli to Marx**  
See Politics 182bR for description. *Mr. Hulliung*
- HISTORY OF IDEAS 186bR. Against the Traditional Basis of Order: Marsilio of Padua, Machiavelli, Hobbes and Rousseau**  
See History 122bR for description. *Mr. Berkowitz*
- HISTORY OF IDEAS 190a. Major Authors Seminar: Rousseau**  
See French 190a for description. *Mr. Gendzier*
- HISTORY OF IDEAS 195b. The Theory of Literature and Alchemy**  
A survey of scientific thought and alchemical writings from the late Greek to early modern periods. Readings in original alchemical texts will be stressed. *Mr. Stavenhagen*
- HISTORY OF IDEAS 228aR. Some Pre-Theoretical Problems of Sociology**  
See Sociology 228aR for description. *Mr. Wolff*
- HISTORY OF IDEAS 323a and b. Readings in Kabbalah** *Mr. Altmann*
- HISTORY OF IDEAS 400—410. Dissertation Research**  
Independent research for the Ph.D. degree.
- |                                |                          |
|--------------------------------|--------------------------|
| 400. <i>Mr. Aiken</i>          | 406. <i>Mr. Schweber</i> |
| 401. <i>Mr. Altmann</i>        | 407. <i>Mr. Izenberg</i> |
| 402. <i>Mr. Berkowitz</i>      | 408. <i>Mr. Johnson</i>  |
| 403. <i>Mr. Binion</i>         | 409. <i>Mr. Kelly</i>    |
| 404. <i>Mr. Black</i>          | 410. <i>Mr. Gendzier</i> |
| 405. <i>Mr. Diamandopoulos</i> |                          |

# PHYSICS

## Objectives

The graduate program in Physics is designed to equip students with a broad understanding of all major fields of physics and to train them to carry out independent, original research. This objective is to be attained by formal course work and supervised research projects. As the number of students who are accepted is limited, a close contact between students and faculty is maintained, permitting close supervision and guidance of each student.

Advanced degrees will be granted upon evidence of the student's knowledge, understanding and proficiency in classical and modern physics, and in mathematics. The satisfactory completion of advanced courses will constitute partial fulfillment of these requirements. Research upon which theses may be based, with residence at Brandeis, can be carried out in the following areas:

*Theoretical Physics:* Quantum theory of fields, quantum electrodynamics; elementary particle physics; general theory of relativity; quantum statistical mechanics; thermodynamics of irreversible processes; quantum theory of the solid state; the many-body problem; kinetic theory of ionized gases; plasma physics; stellar constitution; stellar and galactic evolution; radiative transfer; cosmology and cosmogony.

*Experimental Physics:* High energy experimental physics; atomic and molecular beams; solid state physics; nuclear magnetic resonance; phase transition phenomena; low temperature physics; radio astronomy; light scattering; positron physics; biophysics.

## Admission

As a rule, only candidates for the Ph.D. degree will be accepted. The general requirements for admission to the Graduate School apply to candidates for admission to the graduate area in physics. Admission to advanced courses in physics will be granted following a conference with the student at entrance.

## Faculty

Professor SILVAN S. SCHWEBER, *Chairman*: Quantum theory of fields. Quantum theory of multiparticle systems.

Professor STEPHAN BERKO: Experimental nuclear and solid state physics. Positron interactions in solids.

Professor DONALD L. CASPAR (Rosenstiel Basic Medical Sciences Research Center): Structural molecular biology. X-ray crystallography.

Professor STANLEY DESER: Quantum theory of fields. Elementary particles. General relativity.

Professor JACK S. GOLDSTEIN: Astrophysics. Radiative transfer. Stellar interiors.

Professor EUGENE P. GROSS: Quantum theory of multiparticle systems. Quantum theory of solids. Kinetic theory. Plasma physics.

Professor PETER HELLER: Solid state experimental physics. Phase transitions.

†Professor EDGAR LIPWORTH: Atomic physics.

Professor ALFRED G. REDFIELD (Rosenstiel Basic Medical Sciences Research Center): Magnetic resonance. Biophysics.

††Professor HOWARD J. SCHNITZER: Elementary particle theory.

Associate Professor MAX CHRÉTIEN: Experimental high energy physics.

† On leave, 1974-75.

†† On leave, Fall Term, 1974-75.

Associate Professor JACQUES COHEN: Computer science. Programming languages. Non-numerical algorithms.

Associate Professor DAVID J. DeROSIER (Rosenstiel Basic Medical Sciences Research Center): Structural molecular biology. X-ray crystallography.

Associate Professor MARCUS T. GRISARU: Field theory. Mathematical physics. Elementary particles.

Associate Professor LAWRENCE E. KIRSCH, (Director, Feldberg Computer Center): High energy experimental physics.

Associate Professor ROBERT V. LANGE: Theoretical many body and solid state physics. Biophysics.

Associate Professor HUGH N. PENDLETON III: Mathematical physics.

Assistant Professor JAMES R. BENSINGER: Experimental high energy physics.

Assistant Professor KARL F. CANTER: Experimental low energy positron physics in atomic and many-body systems.

Assistant Professor WILLIAM S. GORNALL: Experimental solid state and molecular physics.

Assistant Professor ALLEN P. MILLS: Experimental atomic physics. Positronium.

Assistant Professor LAWRENCE M. SCHWARTZ: Theoretical solid state physics. Electronic structure of disordered systems.

Assistant Professor ROBERT F. STEIN: Stellar evolution. Fluid dynamics. Solar corona. Magnetohydrodynamics.

Assistant Professor JOHN F. C. WARDLE: Experimental radio astronomy.

Assistant Professor HERMANN F. WELLENSTEIN: Experimental atomic physics. Electron impact spectroscopy.

## **Degree Requirements**

*Program of Study.* The requirements for advanced degrees in the Department of Physics are as follows:

### **Master of Arts**

1. One year's residence as a full-time student.
2. Six semester courses of advanced work in physics. A thesis on an approved topic may be accepted in place of a semester course.
3. Reading knowledge of Chinese, French, German, Italian, Japanese, Russian or Spanish; or proficiency in computer programming.
4. Satisfactory performance in the Qualifying Examination.

### **Doctor of Philosophy**

1. Two year's residence as a full-time student.
2. Nine semester courses of advanced work in physics.
3. Reading knowledge of two of the languages listed under the Master of Arts requirements, including computer programming, with the restriction that at least one of them must be a "major" language (Chinese, French, German, Japanese or Russian).
4. Outstanding performance on the Qualifying Examination.
5. Passing of an Advanced Examination in topics related to the student's thesis subject. This examination will normally be taken after preparatory studies in the prospective field of research.

## 6. Doctoral thesis and final oral examination.

*Program of Study and Course Requirements.* Normally, first year graduate students will elect lecture courses from the 100 series; second year students from the 200 series. To obtain credit toward residence for a graduate course taken at Brandeis, a student must achieve a final grade of "A" or "B" in that course. A student who obtains a grade lower than "B" or an "Incomplete" in two or more courses in any term will not be allowed to continue his studies beyond the end of that academic year. (A course from which a student withdraws after midterm will be considered as "Incomplete.")

Students may obtain credit for advanced courses taken at another institution provided their level corresponds to the level of the graduate courses at Brandeis and that an honor grade in these courses was obtained.

*Residence Requirements.* A student may obtain up to one year's residence credit toward the Ph.D. requirements for graduate studies taken at another institution. No transfer residence credit will be allowed toward fulfillment of the Master's requirements.

*Teaching.* It is expected that all graduate students will do some undergraduate teaching during the course of their studies.

*Language Examination.* The Language Examination consists of a written translation of a scientific text into English. It is arranged informally between the student and the foreign language examiner. The requirements for the Computer Programming examination are a reasonably complete knowledge of FORTRAN, skill in programming, and familiarity with the most important methods of numerical analysis.

*Qualifying Examination.* In the first year Quantum Mechanics (Physics 102) and Electromagnetic Theory (Physics 101) must be taken by all students unless they are exempted. All students, whether exempted or not, must take the final examinations in these courses (both fall and spring semesters), which also serve as the qualifying examination although the course itself is not required. An oral examination on general physics, given at the end of the first year, completes the qualification requirements.

Specialized courses also will form part of the qualifying examination. At least two graduate courses, with final examinations in the specialized courses listed below, must be taken during the first three semesters: (1) Statistical Mechanics, (2) Atomic and Nuclear Physics, (3) Solid State Physics, (4) Biophysics, (5) Elementary Particles, (6) Astrophysics, (7) Experimental Physics (Physics 109), (8) General Relativity. Note, however, that not all of the above courses will necessarily be given each year.

One semester of Advanced Quantum Mechanics (Physics 202a) will be a required course for all students.

*Advanced Examinations.* Advanced examinations will be in topics partitioned in the several areas of research interests of faculty. Faculty members working in each general area will function as a committee for this purpose and will provide information about their work through informal discussions and seminars. The advanced examination requirement consists of a written paper and an oral examination. While no original research by the student is expected, it is hoped that a proposal for a possible thesis topic will emerge. It is generally expected that the candidates will take the advanced examination in the field they wish to pursue for their Ph.D. theses, although there may be exceptions.

*Thesis Research.* After passing the advanced examination, the student begins work with an adviser who guides his or her research program. The adviser should be a member of the Brandeis faculty but in special circumstances may be a physicist associated with another research institution. The graduate committee of the physics faculty will appoint a dissertation committee to supervise the student's research. The student's

dissertation adviser will be the chairman of the dissertation committee. The committee will recommend the student for admission to candidacy for the doctorate on recommendation of his or her adviser.

*Dissertation and Final Oral Examination.* The doctoral dissertation must represent a piece of research of a standard acceptable to the faculty committee appointed for each Ph.D. candidate. The final oral examination, or defense, is an examination in which the student will be asked questions pertaining to the dissertation research.

## **Courses of Instruction**

### **PHYSICS 100b. Theoretical Mechanics**

Mechanics of point systems. Lagrangian and Hamiltonian methods. Small vibrations. Transformation theory. Integral invariants. Kinematics and dynamics of rigid bodies. Perturbation theory. Relativistic mechanics. *Mr. Schweber*

### **PHYSICS 101a. Electromagnetic Theory**

Electrostatics, magnetostatics, boundary value problems. *Mr. Stein*

### **PHYSICS 101b. Electromagnetic Theory**

Maxwell's equations. Quasi-stationary phenomena. Radiation. *Mr. Schnitzer*

### **PHYSICS 102a. Quantum Mechanics I**

Nonrelativistic quantum mechanics in the Schrodinger, Heisenberg and Dirac formulations. One dimensional problems. Three dimensional problems with spherical symmetry. Rayleigh-Schrodinger perturbation theory. *Mr. Pendleton*

### **PHYSICS 102b. Quantum Mechanics II**

Quantum theory of angular momentum. Systems of identical particles; permutations. Description of scattering experiments; the Born approximation. Sudden and adiabatic approximations. Time-dependent perturbation theory. Applications to atomic, nuclear, solid state and elementary particle physics. *Mr. Pendleton*

### **PHYSICS 103a. Statistical Physics**

Review of thermodynamics; statistical postulates; microcanonical ensemble; Maxwell-Boltzman distribution. Thermodynamic laws; canonical distribution; grand canonical ensemble; specific heats and magnetic susceptibilities in non-interacting systems. Bose systems; Brownian motion; Einstein theory; Perrin experiments; Nyquist-Johnson noise; fluctuation-compliance theorem; correlation functions. Transport theory. Mean field theories of cooperative phenomena. *Mr. Schwartz*

### **PHYSICS 104aR. Solid State Physics**

The formal description of periodic systems. The vibrational and electronic properties of solids. Electron dynamics on the Fermi surface. The mean field theory of magnetic solids. *Mr. Schwartz*

### **PHYSICS 104bR. Solid State Physics**

Thermal, electric and magnetic properties of solids. Lattice vibrations. Specific heat. Band theory of solids. Fermi surfaces. Selected topics in superconductivity and ferromagnetism. *Mr. Berko*

### **PHYSICS 109a and b. Advanced Laboratory**

Methods and techniques of experimental research. *Staff*

### **PHYSICS 110a. Mathematical Physics**

Linear vector spaces: matrices, operators, Hilbert spaces. Orthogonal functions. Probability theory. *Staff*

**PHYSICS 128a. Electronics for Scientists**

This course will furnish a background in basic electronics to those students whose work involves the use of the increasingly wide array of electronic instrumentation.

*Prerequisite:* Physics 10 or 11, or the equivalent.

*Six laboratory hours a week.*

*Mr. Mills*

**PHYSICS 137a. Science in the Second Half of the Nineteenth Century**

Investigations into the development of the conceptual framework for the description of "complex" systems in the physical sciences. Particular attention will be paid to the evolution of probabilistic descriptions. The historical setting will be outlined and the interaction and flow of ideas between the various disciplines traced.

*Mr. Schweber*

**PHYSICS 152b. Structural Biology**

See Biology 152b for description.

*Ms. Cohen and Mr. Caspar*

**\*PHYSICS 200b. General Relativity**

**\*PHYSICS 201b. Physics of Many Particle Systems**

**PHYSICS 202a. Advanced Quantum Mechanics**

Formal theory of scattering. Many particle systems. Elements of second quantization. Relativistic quantum mechanics. Klein-Gordon and Dirac equations.

*Mr. Grisaru*

**\*PHYSICS 202b. Relativistic Quantum Field Theory I**

**PHYSICS 207a. Plasma Physics**

Electrodynamics and statistical mechanics of classical plasmas: the dielectric tensor, dispersion relations, fluctuation-dissipation theorem, dynamics of a test particle in a plasma, and plasma kinetic equations.

*Mr. Gross*

**PHYSICS 208aR. Cosmology**

The structure and evolution of the universe will be discussed, with particular emphasis on physical processes at early epochs, and problems in observational cosmology.

*Messrs. Stein and Wardle*

**PHYSICS 209a and b. Laboratory Seminar**

Analysis of some important recent experiments.

*Staff*

**PHYSICS 210a and b. Theoretical Seminar**

Analysis of important recent development in theoretical physics.

*Staff*

**\*PHYSICS 211b. High Energy Physics**

**PHYSICS 213a and b. Tutorial in Physics**

*Staff*

**PHYSICS 218a. Astrophysical Gas Dynamics**

Fluid dynamic and magneto hydrodynamic processes will be discussed and applied to astrophysical situations. Topics will include relativistic and non-relativistic shocks, stability, accretion, gravitational collapse, and star and galaxy formation.

*Mr. Stein*

**PHYSICS 240b. Seminar in Biophysical Research**

Students in Physics taking the advanced qualifying examination in Biophysics are encouraged to take this course.

*Ms. Cohen and Mr. DeRosier*

<b>PHYSICS 250c. Chemical Physics Seminar</b>	
Required of graduate students in chemical physics.	<i>Mr. Wellenstein</i>
<b>PHYSICS 254a. Seminar on Advanced Physical Techniques</b>	
See Biochemistry 238a for description.	<i>Mr. Redfield</i>
<b>Research Courses</b>	
<b>PHYSICS 401. Experimental Atomic and Molecular Physics</b>	<i>Mr. Liptworth</i>
<b>PHYSICS 403. Theoretical Atomic and Molecular Physics</b>	<i>Mr. Pendleton</i>
<b>PHYSICS 404. Experimental Nuclear Physics</b>	<i>Mr. Berko</i>
<b>PHYSICS 405. Theoretical Nuclear Physics</b>	<i>Mr. Schnitzer</i>
<b>PHYSICS 406. Experimental Elementary Particle Physics</b>	<i>Mr. Chrétien</i>
<b>PHYSICS 407. Experimental Elementary Particle Physics</b>	<i>Mr. Kirsch</i>
<b>PHYSICS 408. Experimental Elementary Particle Physics</b>	<i>Mr. Bensinger</i>
<b>PHYSICS 409. Theoretical Elementary Particle Physics</b>	<i>Mr. Deser</i>
<b>PHYSICS 410. Theoretical Elementary Particle Physics</b>	<i>Mr. Grisaru</i>
<b>PHYSICS 411. Theoretical Elementary Particle Physics</b>	<i>Mr. Pendleton</i>
<b>PHYSICS 412. Theoretical Elementary Particle Physics</b>	<i>Mr. Schnitzer</i>
<b>PHYSICS 413. Theoretical Elementary Particle Physics</b>	<i>Mr. Schweber</i>
<b>PHYSICS 414. Experimental Solid State Physics</b>	<i>Mr. Berko</i>
<b>PHYSICS 415. Experimental Solid State Physics</b>	<i>Mr. Gornall</i>
<b>PHYSICS 416. Experimental Solid State Physics</b>	<i>Mr. Heller</i>
<b>PHYSICS 417. Experimental Solid State Physics</b>	<i>Mr. Mills</i>
<b>PHYSICS 418. Theoretical Solid State Physics</b>	<i>Mr. Gross</i>
<b>PHYSICS 419. Theoretical Solid State Physics</b>	<i>Mr. Lange</i>
<b>PHYSICS 420. Theoretical Solid State Physics</b>	<i>Mr. Schwartz</i>
<b>PHYSICS 421. Relativity</b>	<i>Mr. Deser</i>
<b>PHYSICS 422. Mathematical Physics</b>	<i>Mr. Grisaru</i>
<b>PHYSICS 423. Mathematical Physics</b>	<i>Mr. Schweber</i>
<b>PHYSICS 424. Statistical Physics</b>	<i>Mr. Gross</i>
<b>PHYSICS 425. Statistical Physics</b>	<i>Mr. Pendleton</i>
<b>PHYSICS 426. Astrophysics</b>	<i>Mr. Goldstein</i>
<b>PHYSICS 427. Astrophysics</b>	<i>Mr. Stein</i>
<b>PHYSICS 428. Astrophysics</b>	<i>Mr. Wardle</i>
<b>PHYSICS 429. Structural Biology</b>	<i>Mr. Caspar</i>
<b>PHYSICS 430. Biophysics</b>	<i>Mr. Redfield</i>

**PHYSICS 431. Experimental Solid State Physics**

*Mr. Canter*

**PHYSICS 432. Experimental Atomic and Molecular Physics**

*Mr. Wellenstein*

**PHYSICS 433. Structural Biology**

*Mr. DeRosier*

## **POLITICS**

### **Objectives**

The graduate program in Politics, leading to the degree of Doctor of Philosophy, emphasizes comprehensive professional training by stressing both the fundamentals of the discipline grounded in the study of political thought and institutions and the requirements of method and analytical skills.

### **Admission**

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. Normally, the student's undergraduate training must be in a field of social sciences to be considered for admission to this program. Applicants are expected to take the Graduate Record Examination.

### **Faculty**

Professor RUTH SCHACHTER MORGENTHAU, *Chairwoman*; Professors MARVER H. BERNSTEIN, ROBERT H. BINSTOCK, DONALD HINDLEY, †GEORGE ARMSTRONG KELLY, ROY C. MACRIDIS, I. MILTON SACKS; Associate Professors ROBERT J. ART, JOHN T. ELLIFF, MARTIN A. LEVIN, PETER WOLL; Assistant Professors ROY F. GROW, MARK L. HULLIUNG, PETER B. NATCHEZ, †††BRUCE I. OPPENHEIMER, STEVEN J. ROSEN.

## **Degree Requirements**

### **Master of Arts**

No one will be accepted in the program who is not a doctoral candidate. However, the M.A. degree may be awarded upon satisfactory completion of one year of residence, the demonstration of proficiency in one foreign language, and the acceptance of two graduate seminar papers by the Department or satisfactory achievement in a departmental oral examination whose contents will be decided on an *ad hoc* basis.

### **Doctor of Philosophy**

Students should note certain special features of the program, in particular, (a) instruction in small seminars under close faculty supervision, (b) supervised independent study facilities within the Department, (c) the opportunity to incorporate work in a related field into the degree program. Each student is assigned to a departmental adviser who will help plan a professional and pertinent program of study. A continuity of faculty direction is insured throughout the program, with allowance for shifts in curricular interest.

*Program of Study.* The student must complete two years in residence and a minimum of twelve half-courses. Each graduate student will be required to take three of the following five fields: American Government, Comparative Government, International Relations, Political Theory, and Methods and Methodology or two of the five plus a

† On leave, 1974-75.

††† On leave, Spring Term, 1974-75.



category of study in another graduate department of the University, as shall be judged valid for the student's program by this Department.

Within each of the three fields chosen, graduate students will be required to take a minimum of *two* formal courses. The standard work load for full-time students is at least three courses in each semester of their first year and at least two formal courses in each semester of their second year. As a rule, reading courses during the first year are discouraged. At the end of the first semester, entering students shall submit to the Graduate Studies Chairman a statement indicating, at minimum, their major and one of the minor fields of interest. At the end of the first year, an informal examination will be given to test the general progress of the student and suggest a future work plan. The examination will relate primarily to the courses taken by the student.

Normally, at the end of the fourth semester or early in the fifth, a formal oral and written examination for candidacy for the Ph.D. degree will be given covering the student's three fields but with emphasis on the sub-fields in which the student has done most of the work. In each case, the examination responds to the particular program of the student. In the case that one of the student's fields is satisfied in another Department, the appropriate member of that Department joins the examining board. Additionally, students may have the option of satisfying the examination requirement for one of the three fields (so long as it is not the major field and so long as it is not outside the Department) through an equivalent testing method to be authorized by the relevant adviser. In this latter case, the formal examination is restricted to two fields.

*Language Requirements.* By the end of the first year of study, the student must demonstrate proficiency in one approved foreign language. (Quantitative methods may be offered in lieu of one of the foreign languages but *not* for purposes of obtaining the M.A. degree.) Proficiency in a second language must be demonstrated before the end of the fourth semester in residence. Language proficiency must be demonstrated at Brandeis and certified by the Department.

*Admission to Candidacy.* A student may be admitted to candidacy for the Ph.D. degree upon completing the residence requirement, and passing the qualifying examination, fulfilling the language requirement and obtaining departmental approval of the subject and preliminary precis of the dissertation.

*Dissertation and Defense.* The dissertation will be completed under the supervision of the appropriate member of the departmental faculty. It must be sponsored by a departmental committee of at least two members and have the approval of the graduate committee of the Department. Eight half-courses will be allowed for dissertation research. It is assumed that the writing of the dissertation will take at least one year and, barring exceptional circumstances, not more than two and one-half years. The student must successfully defend the dissertation at a final oral examination.

*Fields and Sub-Fields.* For the purpose of illustration, a list of sub-fields is given below. They should be gauged against the Department's curricular listings and resources. In each field, the student is expected to be familiar with pertinent theories and approaches as well as with the content of the sub-field category.

#### A. American Government

1. Public Administration and Public Policy. Theory, historical development, institutions, functions and current practice of the American bureaucracy and related elements.
2. The Federal Government. The Presidency, Congress, the Federal Judiciary and their development and inter-relatedness as political structures.
3. Parties, Interest Groups, and Voting Behavior. The historical development and

political sociology of the above, including a grasp of contemporary theoretical work.

4. Constitutional Law.

5. State and Local Politics. Including urban studies, regional political sociology, local parties, and relations of sub-governments with Washington.

**B. Comparative Politics**

1. Comparative Political Institutions. Cross-national study of growth and functions of parties, legislatures, executives, bureaucracies, etc. Soviet Union and European Communist states; Western Europe (emphasis on France, England, Germany); Middle East and North Africa (i.e. Morocco to Iran, Israel); Sub-Saharan Africa; China, Japan, and Korea; South and Southeast Asia; Latin America; Canada, Australia, New Zealand, South Africa, and pre-World War II Commonwealth states.

2. Comparative Political Development. Emphasis on political, economic, and social processes of modernization in terms of comparative political systems.

3. Comparative Political Sociology. The explanation of political phenomena relying upon social, economic, and cultural factors.

4. Nationalism, Imperialism and Revolution. The student is responsible not merely for recent events but for the theory and history of all pertinent material.

**C. International Politics**

1. Theories of International Relations.

2. Diplomacy and War. Special concentration on diplomatic history, the theory of negotiations, and the pursuit of political ends by military means.

3. Comparative Foreign Policy.

4. American Foreign Policy and National Security Policy.

**D. Methods and Methodology**

1. Systems and Methods of Modern Political Analysis. This category includes social science methodology, applications of the philosophy of science, analytic philosophy.

2. Statistical and Other Quantitative Methods, Theory of Games, etc.

**E. Political Theory and Methods**

1. Plato to the Puritan Revolution. The concepts and history of political thought covering the Greek, Hellenistic, Roman, Byzantine, Medieval, Renaissance, and Reformation periods.

2. Machiavelli to the Present. This overlaps with the previous category in the years 1500-1650. The overlap makes for more concrete areas of study.

3. Problems and Issues in Political Thought. To be arranged with the appropriate adviser. The purpose here is to allow the student some relief from the historical approach.

**Courses of Instruction**

**AMERICAN GOVERNMENT**

**POLITICS 101aR. Parties, Pressure Groups and Public Opinion.**

This course will examine the means by which mass publics get involved in politics. Some of the topics covered are: nominating politics, the psychology of participating and lobbies. Considerable attention will be given to working class politics.

*Mr. Natchez*

#### **POLITICS 104a. The American Voter**

Consideration of both historical and behavioral theories to explain individual voting decisions and to interpret the meaning of elections in American politics. Topics: the modernization of American political culture, electoral strategies, voter rationality, extremism and radical politics, and the consequences of electoral outcomes, and American electoral politics since the New Deal. *Mr. Natchez*

#### **POLITICS 107b. The Politics of Public Policy**

This course will examine the nature of public policy outputs of political sub-systems in American government. Particular attention will be paid to education, welfare, medical care and tax reforms. *Mr. Woll*

#### **POLITICS 111a. The American Congress**

This course will discuss the structure and behavior of the Congress. It will include a discussion of the origins and consequences of the committee system and the rules governing each House of Congress, particularly those relating to the Seniority System. Additionally, this course will consider the relationship between the Congress and the Executive Branch. *Mr. Oppenheimer*

#### **POLITICS 113bR. The American Presidency**

An analysis of the contemporary nature and role of the American Presidency. The course will include discussions of the sources of presidential power, the constitutional basis of the presidency, the role of the Executive Office, the relationship between the Presidency and Congress, the Judiciary, and the bureaucracy. *Mr. Oppenheimer*

#### **POLITICS 114aR. The Legal Process: Law and Public Policy**

An examination of the methods of legal analysis, the processes through which the law develops, the limits of its competence, and the institutions which make law effective. Law is viewed as a technique for the resolution of public policy problems and a social process for affirming community values. *Mr. Elliff*

#### **\*POLITICS 115a. History of American Constitutional Law and Theory**

#### **POLITICS 115b. American Constitutional Law and Theory**

An examination of the Supreme Court's contemporary constitutional role, with emphasis on the nature and dynamics of Supreme Court decision-making; competing ideas of the proper scope for judicial review; and the political and social context for constitutional change. *Mr. Elliff*

#### **POLITICS 116bR. Civil Liberties in America**

Examination of the historical development of individual liberties with emphasis on the role of government and the relationship between civil liberties and political and social movements. *Mr. Elliff*

#### **POLITICS 117a. Administrative Law**

An examination of the role of administrative agencies in law making and adjudication. Particular emphasis will be given to problems of defining and protecting the public interest as well as the rights of individuals and groups directly involved in administrative proceedings. *Mr. Woll*

#### **POLITICS 118a. Seminar: Policy Formation**

A study of the aspects of policy making with reference to various organs of decision making in the Federal Government. *Mr. Woll*

\* Not to be given in 1974-75.

**POLITICS 119a. Seminar: Policy-Making in Urban Areas**

An examination of the development in urban areas of policies relating to poverty, class, race and the administration of justice. Special emphasis on the political conflict generated in the development and the relationship of political decision makers and social science "experts."

*Mr. Woll*

**POLITICS 120a. Politics of Urban Areas**

An analysis of the management of conflict in urban areas and its institutional (the distribution of authority and influence), demographic, and cultural setting. Special emphasis on the relationship between patterns of conflict management of urban governments and the public services provided by these governments, such as criminal justice, education, welfare and poverty programs.

*Mr. Levin*

**\*POLITICS 121a. The Politics of Poverty, Class and Race in Urban Areas**

**POLITICS 123b. The Politics of Urban Criminal Justice**

Analysis of the behavior of police, prosecutors and trial court judges in urban areas. Special emphasis on the relationships between these officials and the political systems of the urban areas. Evaluation of these officials' behavior and especially its effect on their clients.

*Mr. Levin*

See also Politics 168a and 168b, American Foreign Policy and Politics 125a, Political Development in the Black Community.

**POLITICS 124a. Labor and Politics in the United States**

Emphasizing the historical approach this course is an analytical treatment of the theories and practices of labor participation in American politics.

*Mr. Sacks*

**COMPARATIVE POLITICS**

**POLITICS 125aR. Political Development in the Black Community**

See AAAS 125aR for description.

*Messrs. Adam and Swan*

**POLITICS 130b. The Political and Social Institutions of the Soviet Union**

After a brief historical study of the 1917 revolutions, this course will analyze the ideological and institutional sources of Soviet state and party activity. Particular attention will be devoted to institutional development and its political, economic and social causes.

*Mr. Grow*

**POLITICS 140a. The Politics of Africa**

Changing approaches to the study of Africa: conquest, colonialism, the nationalist era and post-independence problems. Country case studies, including Ghana, Guinea, Senegal, Ivory Coast, Tanzania, Kenya and South Africa. Political ideas of Nkrumah, Toure, Nyerere, Senghor. Experiments in planning and economic development. Lectures and readings are supplemented by films.

*Ms. Morgenthau*

**\*POLITICS 140b. Seminar in Contemporary African Politics**

**POLITICS 144a. Political Change in Latin America: I**

This course focuses on the elements of stability and instability in the region. Specific examination is made of the Mexican and Cuban revolutions, the aborted Guatemalan revolution of 1944-54, and the "maverick" constitutional democracy of Costa Rica.

*Mr. Hindley*

**POLITICS 144b. Political Change in Latin America: II**

This course concentrates on the politics of Brazil, Argentina and Bolivia: respectively a military dictatorship, a Peronista question mark, and the locale of one of Latin America's three genuine revolutions.

*Mr. Hindley*

\* Not to be given in 1974-75.

**POLITICS 147a. Government and Politics of China**

An analysis of the sources of Chinese political behavior, emphasizing the post-revolutionary period since 1949, but touching also on historical, cultural and sociological factors. *Mr. Grow*

**POLITICS 150a. Government and Politics: Southeast Asia**

An introduction to major aspects of the political development of Southeast Asia in the modern period: the impact of Western colonialism, the nationalist struggles, the post-independence attempts to establish viable political systems, communism, and intervention from outside the region. *Mr. Hindley*

**\*POLITICS 152b. Government and Politics: South Asia**

**POLITICS 156b. European Political Systems**

This course will deal in depth with parties, ideologies, and governmental institutions of European countries, with particular emphasis on Britain, France, and Germany. *Mr. Macridis*

**POLITICS 157b. Seminar: Comparative Political Parties**

This course will deal with growth and changes among political parties in Western democracies, Canada and USA; issues of partisanship, ideology, political reorganization and elections; contemporary trends among political parties—Communists, Socialists, Christian Democrats and “conservatives.” *Mr. Macridis*

**POLITICS 163a. The Study of Revolution: Marx to Mao**

An introduction to the political and economic themes in Communist literature, concentrating primarily on the works of Marx, Engels, Lenin, Trotsky, Stalin and Mao Tse-tung. The course will investigate in both a topical and historical manner basic theories of state, economic organization, social conflict, political activity and revolution in their writings. *Mr. Grow*

**\*POLITICS 164a. Comparative Foreign Policy**

**\*POLITICS 165b. The Comparative Study of Fascism**

**INTERNATIONAL POLITICS**

**POLITICS 168a. American Foreign Policy**

An historical analysis of these American foreign policy strategies: isolationism, imperialism, collective security, balance of power, and containment. The effects of foreign pressures and domestic politics on these strategies will be considered. The course will focus on the period 1890 to 1950. *Mr. Art*

**POLITICS 168b. American Foreign Policy**

A post-World War II analysis of American foreign policy. The course will focus on three areas: how foreign policy decisions have been made, how they have been implemented, and what effects they have had. *Mr. Art*

**\*POLITICS 169b. The Military-Industrial Complex**

**POLITICS 170a. Imperialism**

An examination of the theories of imperialism and neo-colonialism, especially since 1945. Topics include theories of capitalist imperialism; Soviet imperialism; the terms of trade debate; the motivations and consequences of foreign investment; theories of foreign trade and aid; and the relationship between theories of underdevelopment. *Mr. Rosen*

\* Not to be given in 1974-75.

## **POLITICS 171aR. Multinational Enterprises and National Power**

The political implications of the rapid growth over the last two decades of multinational enterprises, involving raw materials and manufacturing, often tying together trade and investment. Effects on national and international politics of the decline in economic power perceived by sovereign states. *Ms. Morgenthau*

## **POLITICS 172b. Theories of International Politics**

An examination of basic theories and concepts that have been offered for the study of international relations. Topics to be covered will include power, conflict and accommodation, alliance systems, international law and organization.

*Mr. Rosen*

## **\*POLITICS 173b. Modern International Politics**

## **\*POLITICS 174a. Problems of National Security**

## **POLITICS 175a. International Relations in the Middle East**

Analysis of the forces underlying international relations in the Middle East since World War II. Topics include processes of conflict and accommodation, the balance of power, the political economy of oil, and the relationship between the Middle East and the larger world system.

*Mr. Rosen*

## **POLITICS 177b. China and the Soviet Union in World Affairs**

Seminar investigating the role of China and the Soviet Union in the international system. Topics will include Sino-Soviet relations, Communist bloc activity, and the relationship of China and the Soviet Union to specific areas of the world such as East Europe, the Middle East and the United States.

*Mr. Grow*

## **POLITICS 178aR. International Politics in the Pacific Area**

Analysis of the forces underlying international relations in the Pacific area in the twentieth century. Topics include: Soviet-Asian policies, the strategic position of the emergent Southeast Asian states, Sino-Japanese conflict; America's stake in Asia; Communist China's foreign policy; prospect for peace in the Pacific.

*Mr. Sacks*

See also Politics 164a, Comparative Foreign Policy.

## **POLITICAL THEORY AND METHODS**

## **\*POLITICS 182a. Political Thought from Plato to Machiavelli**

## **POLITICS 182bR. Political Thought from Machiavelli to Marx**

The first segment of the course will examine struggles between proponents and opponents of the old regime, with special emphasis on the germination of radical thought in pre-revolutionary Europe. The second segment will deal with intellectual responses to the French Revolution.

*Mr. Hulliung*

## **\*POLITICS 186b. Political Philosophy of the Enlightenment**

## **\*POLITICS 187a. Liberalism as Political Force and Idea**

## **\*POLITICS 191b. Contemporary Political Theory**

## **\*POLITICS 193a. Theories of Political Sociology**

## **POLITICS 201 Introduction to Political Sciences**

Survey of major concepts and theories for the study of politics.

*Mr. Natchez and Staff*

\* Not to be given in 1974-75.

## **POLITICS 204b. International Politics**

An examination of approaches, concepts and theories in the field of international politics. *Mr. Art and Staff*

The following 200-level courses will be offered as seminars for graduate students in conjunction with corresponding 100-level courses. The graduate students will take the 100-level course but will meet in a special and regular seminar each week. (See appropriate 100-level course for description; e.g., Politics 115b for Politics 215b description.)

**POLITICS 215b. American Constitutional Law and Theory** *Mr. Elliff*

**POLITICS 219a. Seminar: Policy-Making in Urban Areas** *Mr. Levin*

**POLITICS 240aR. The Politics of Africa** *Ms. Morgenthau*

**POLITICS 256b. European Political Systems** *Mr. Macridis*

**POLITICS 282bR. Political Thought from Machiavelli to Marx** *Mr. Hulliung*

## **POLITICS 301—312. Readings in Politics**

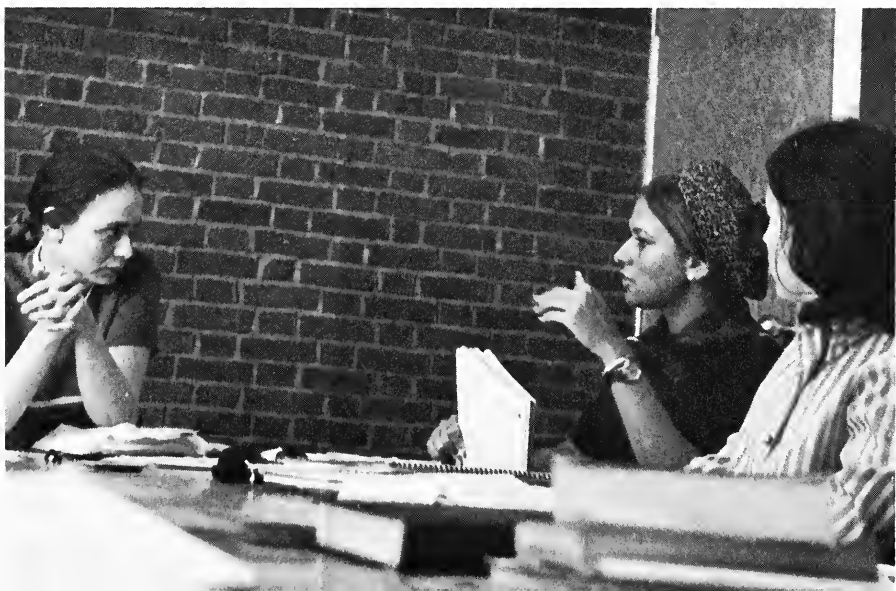
301a and b.	<i>Mr. Elliff</i>	307a and b.	<i>Ms. Morgenthau</i>
302a and b.	<i>Mr. Grow</i>	308a and b.	<i>Mr. Natchez</i>
303a and b.	<i>Mr. Hulliung</i>	309a	<i>Mr. Oppenheimer</i>
*304a and b.	<i>Mr. Kelly</i>	310a and b.	<i>Mr. Rosen</i>
305a and b.	<i>Mr. Levin</i>	311a and b.	<i>Mr. Sacks</i>
306a and b.	<i>Mr. Macridis</i>	312a and b.	<i>Mr. Art</i>

## **POLITICS 400—408. Dissertation Research**

Independent research for the Ph.D. degree.

400. <i>Mr. Art</i>	405. <i>Mr. Macridis</i>
401. <i>Mr. Natchez</i>	406. <i>Ms. Morgenthau</i>
402. <i>Mr. Hindley</i>	407. <i>Mr. Sacks</i>
403. <i>Mr. Kelly</i>	408. <i>Mr. Woll</i>
404. <i>Mr. Levin</i>	

\* Not to be given in 1974-75.



# PSYCHOLOGY

## Objectives

The graduate program in Psychology leads to the degree of Doctor of Philosophy. The goal of the program is to develop competent research psychologists and teachers who will become contributors to knowledge in psychology. Towards this end, an emphasis is placed on research activity, starting in the first semester of graduate study. The program of study reflects a belief that the student should develop an area of research specialization and also should be exposed to a range of topics in general psychology. Dissertation supervision is available in the following areas: Sensation, Perception, Memory, Learning, Thinking, Comparative, Child, Personality, Psychopathology, and Social Psychology.

## Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

An undergraduate major in psychology is not required. Students with inadequate preparation may make up their deficiencies during their first year, but without residence credit. Students are admitted on a competitive basis which includes evaluation of previous academic record, recommendations, results of the Graduate Record Examinations (Aptitudes and Psychology Achievement Tests), and the Miller Analogies Test.

## Faculty

Associate Professor MAURICE HERSHENSON, *Chairman*: Perception. Developmental Theory.

Professor RICARDO B. MORANT: Experimental psychology. Developmental psychology. Perceptual mechanisms. Sensation and perception.

Professor MARIANNE L. SIMMEL: Sensory physiology. Cognitive processes. Perception.

Visiting Associate Professor DAVID J. SCHNEIDER: Social psychology. Personality. Child psychology.

Associate Professor ARTHUR WINGFIELD: Human memory. Cognitive processes. Experimental psychology.

Associate Professor JEROME WODINSKY: Comparative psychology. Learning theory. Sensory physiology.

Assistant Professor LAWRENCE E. AREND JR.: Psychophysiology of Human vision.

Assistant Professor JOHN R. FREDERIKSEN: Mathematical psychology.

Assistant Professor RAYMOND KNIGHT: Clinical psychology. Experimental psychopathology.

Assistant Professor JAMES R. LACKNER, *Director of Graduate Studies*: Human experimental psychology. Psycholinguistics.

Assistant Professor LESLIE A. MCARTHUR: Social psychology. Interpersonal attraction.

Assistant Professor MARGARET C. NELSON: Animal behavior, Neurophysiology, and Neuroethology.

Assistant Professor JAMES D. ROFF: Psychopathology.

Assistant Professor SOLOMON SCHIMMEL: Developmental psychology.



## Degree Requirements

### Doctor of Philosophy

*Program of Study.* Although there is a two-year minimum residency requirement, four years of full-time graduate study are usually required for the Ph.D. The student is expected to carry the equivalent of twelve credit units per semester during residency.

*Research.* Each student will devote one-quarter of his or her time to research the first semester of the entering year. For all subsequent semesters, students shall devote a minimum of one-half time to research.

*Research Reports.* Students will submit reports on their research for the preceding year, in journal form, in time to permit evaluation of the first project by the end of the third semester, and of the second project by the end of the fifth semester. In the event that a student's first year research report is unsatisfactory, the student will be required to take a terminal master's degree completed not later than the end of the fourth semester of residence. Students who have satisfactorily completed the research requirement will be permitted to continue their work toward the doctorate with no formal requirement of a master's degree.

*Course Requirements.* Entering students shall take *two seminars* and Psychology 210a in the first semester of residence, one seminar and Psychology 210b in the second semester. After that they shall take two seminars per semester in the second year, and one seminar each semester thereafter. Course selection will not be restricted to the Psychology Department, but will be arranged by the student in consultation with his faculty adviser. Two of the courses that the student takes during his or her graduate training must be outside of the area of specialization.

*Qualifying Examinations.* In the early part of the fifth semester of residence, each student will be thoroughly examined in the historical, theoretical and empirical literature related to the student's area of specialization, broadly conceived. The chairman of the department will appoint a three-member committee to administer the qualifying examination from a list provided by the student's dissertation adviser. In the event that the student fails his or her qualifying examination, he or she will be awarded a terminal master's degree on the basis of an adequate second-year research paper. A student may petition the department to take the examination a second time if necessary.

*Breadth Requirement.* All students graduating from the program should be qualified to teach an introductory course in Psychology covering the range of topics included in both of our own Psychology 1a and 2a courses. All students, either during their first or second year in residence, will be required to assist in both the 1a and 2a courses. The student assistants in the courses will be held responsible for the contents of a reading list provided at the beginning of each course in which they assist. The reading list will be prepared by a committee of faculty appointed by the chairman. The same committee will prepare a written examination, based on the reading list, that will be used to evaluate each student's performance at the end of the course.

*Language Requirement.* Reading proficiency in at least one foreign language is required. This language must be one in which substantial psychological literature exists. Language examinations are offered by the department four times a year, usually in September, December, February and May. Students are expected to satisfy the language requirement as soon as possible. By regulation of the Graduate School, a student who has not passed an examination in at least one foreign language by the end of the first year of study will not be eligible for financial aid from the University for the second year.

*Admission to Candidacy.* A student may be admitted to candidacy for the doctorate upon fulfilling the above requirements.

*Dissertation and Defense.* Following the completion of all examinations, the student will prepare a prospectus of the proposed dissertation study in consultation with a faculty dissertation sponsor. The prospectus may be based on preliminary research conducted prior to the student's admission to candidacy for the doctorate. Upon approval by the faculty of the department, a dissertation committee of three or more members will be appointed by the department chairman, including the dissertation sponsor as chairman of the committee. The dissertation sponsor will be responsible for advising the student throughout the performance of his work, in consultation with the remaining members of the committee at appropriate times in the course of the work. From time to time, the committee will report the student's progress to the department faculty.

The dissertation should provide evidence of originality, scholarship and research ability. It should be a contribution to knowledge, ordinarily an experimental investigation, but not necessarily so. Upon submission to the chairman of the department of a copy of the thesis, signed by all three members of the thesis committee, and a successful defense of the thesis before all members of the department, the award of the Ph.D. will be recommended to the Faculty Council of the Graduate School.

## **Courses of Instruction**

### **\*PSYCHOLOGY 110b. Mass Behavior**

#### **PSYCHOLOGY 111b. Seminar in Socialization**

Readings and discussion on the nature of childhood and adult socialization. Emphasis will be given both to imitation and cognitive approaches and particular areas of concern will be role (especially sex-role) development and the development of moral behavior and judgment.

Enrollment by permission of the instructor.

*Mr. Schneider*

#### **PSYCHOLOGY 112b. Moral Development**

This course will focus primarily on analyses of selected psychological studies of the development of the affective, cognitive, and behavioral dimensions of morality in the individual. In addition, an attempt will be made to relate the psychology of moral development to ethological, philosophical, and sociological discussions of morality.

*Prerequisite:* Permission of the instructor.

Enrollment limited to fifteen students.

*Mr. Schimmel*

#### **PSYCHOLOGY 116b. Light, Color and Vision**

Visual perception considered from the points of view of physics, biology, and psychology. Wave and quantal natures of light; anatomy and physiology of the visual pathway; color vision; visual acuity and flicker; form and brightness perception. Laboratory work and demonstrations will be integrated with lectures.

*Prerequisite:* Permission of instructors.

Enrollment limited to twenty students.

*Messrs. Arend and Lange*

#### **PSYCHOLOGY 118a. Physiological Psychology**

Those aspects of physiology most relevant to psychological investigation: the anatomy and physiology of receptor and effector organs, the neuron and synapse, sensory and motor neural pathways, the integrative activity of the central nervous system, the autonomic nervous system and the action of hormonal factors.

*Ms. Nelson*

\* Not to be given in 1974-75.

**PSYCHOLOGY 119a. Comparative Psychology**

The analysis of the behavior of organisms from a comparative and evolutionary perspective, considering genetic, humoral, sensory, and experiential factors in the control of behavior.

*Prerequisite:* Permission of the instructor.

*Ms. Nelson,*

**PSYCHOLOGY 119aR. Comparative Psychology**

*Mr. Wodinsky*

**PSYCHOLOGY 120a. Experimental Psychology**

Individual or group research carried out under supervision. Techniques of experimentation, experimental design.

*Mr. Wingfield*

**PSYCHOLOGY 120aR. Experimental Psychology**

*Ms. Nelson*

**PSYCHOLOGY 124b. Human Memory**

A detailed examination of traditional and contemporary views on the nature and processes involved in short- and long-term memory.

*Mr. Wingfield*

**PSYCHOLOGY 126a. Methods in Personality and Social Psychology**

A study of the design and execution of personality and social psychology research together with practical experience in carrying out several research projects.

*Prerequisite:* Permission of the instructor required.

Enrollment limited to fifteen students.

*Ms. McArthur*

**PSYCHOLOGY 127aR. Temporal Patterning of Behavior**

Seminar on problems of serial patterning in the perception and production of speech. Discussion of problems in the integration and execution of complex motor patterns.

Enrollment limited to fifteen students.

*Mr. Lackner*

**PSYCHOLOGY 128a. Sensory Processes**

Examination of the anatomy, physiology and psychophysics of the sensory systems, with special emphasis on the visual and auditory systems. Primary emphasis will be on the problem of sensory coding and human sensation.

Enrollment limited to fifteen students.

*Mr. Lackner*

**PSYCHOLOGY 134a. Abnormal Psychology**

A general introduction to psychopathology. Various theoretical models will be discussed. The techniques and findings of research, both clinical and experimental, will be emphasized.

*Mr. Knight*

**PSYCHOLOGY 134aR. Abnormal Psychology**

*Mr. Roff*

**\*PSYCHOLOGY 135a. Psychology of Social Change**

**PSYCHOLOGY 136a. Selected Problems in Perception**

Problems will be chosen from the modalities of vision, somesthesia and kinesthesia. The aim of the seminar is to explore in depth complex issues such as perception and past experience, perception and meaning, the perception of causality, intermodal effects and related topics.

Enrollment limited to fifteen students.

*Ms. Simmel*

**PSYCHOLOGY 137a. Personality**

Selected personality variables and how they have been investigated. Topics will be studied so as to show their relationship to influential psychological theories.

*Mr. Roff*

\* Not to be given in 1974-75.

**PSYCHOLOGY 140a. Learning and Behavior**

The concept of learning will be examined critically, on the basis of infra-human and human studies. Techniques for generating and maintaining learned behavior will receive detailed attention, with emphasis on their relevance to mental retardation, mental illness, delinquency, and education.

Enrollment limited to fifteen students.

*Mr. Wodinsky*

**PSYCHOLOGY 141a. Biological Bases of Motivation**

Topics to be treated include hunger, thirst, migration, sexual behavior and parental behavior. Evidence from biology, neurophysiology and endocrinology will be evaluated.

Enrollment limited to fifteen students.

*Mr. Wodinsky*

**\*PSYCHOLOGY 142b. Psychosomatics**

**PSYCHOLOGY 143b. Cognitive Processes**

Cognitive factors in perception, attention, memory and language. Experimental investigations will be emphasized.

*Prerequisite:* Permission of the instructor.

Enrollment limited to fifteen students.

*Mr. Frederiksen*

**PSYCHOLOGY 144aR. The Psychology of Language**

Language development; names, concepts and symbols; expressive language; metaphor; problems of translation; pathology of language.

*Prerequisites:* Permission of the instructor; fluency in at least one foreign language.

Enrollment limited.

*Ms. Simmel*

**\*PSYCHOLOGY 146a. Psychopathology and Cognition**

**\*PSYCHOLOGY 148b. Attitude Change**

**PSYCHOLOGY 150a. Introduction to Psychological Theory**

A survey of psychological theories including Associationism, Structuralism, Functionalism, Gestalt, Behaviorism, Psychoanalysis and their modern derivatives. Emphasis is on the nature of explanation and the methods by which it is achieved.

*Mr. Hershenson*

**PSYCHOLOGY 153a. Language, Thought and Reason in Children**

The findings and views of Piaget, Chomsky, American behaviorists and neo-behaviorists, and Soviet psychologists on the language, thought and reasoning of children from birth through pre-adolescence will be compared.

*Mr. Schimmel*

**PSYCHOLOGY 158b. Human Spatial Orientation**

A seminar investigating man's ability to perceive spatial relationships and orient himself in space. Discussion of the processes underlying this ability, their development from childhood through maturity and their functioning in persons with brain damage.

*Mr. Morant*

**PSYCHOLOGY 159b. Perception**

A survey of the field of perception covering method, the perception of space, perceptual constancy, figure formation, attention, recognition and visual information processing.

*Mr. Morant*

**PSYCHOLOGY 159aR. Perception**

*Mr. Hershenson*

**\*PSYCHOLOGY 160a. Color Vision and Visual Processes**

\* Not to be given in 1974-75.

**PSYCHOLOGY 161a. Mental Health in the United States: Supervised Field Work**

Students pursue a program of reading and spend one day a week working or observing in some clinical installation; there are weekly class meetings.

*Prerequisite:* Permission of the instructor. Psychology 134, 145 or 171. Mr. Knight

**PSYCHOLOGY 170b. Tests and Measurements**

The course covers test theory, types of measurement, the theory and measurement of reliability and validity, and test construction. The measurement of intelligence, achievement, and personality are also considered. Mr. Knight

**PSYCHOLOGY 171b. Schools of Psychotherapy**

The theories and techniques of several schools of psychotherapy and behavior modification are considered. The theories of personality, methods of intervention, goals of therapy, and relevant research will be emphasized.

*Prerequisite:* Psychology 134a or 137a.

Mr. Knight

**PSYCHOLOGY 173a. Introduction to Psycholinguistics**

An introduction to modern psycholinguistics with an emphasis on speech comprehension and production. The question of critical periods for language acquisition and biological specializations for language behavior in man are also considered.

Mr. Lackner

**PSYCHOLOGY 177a. Neural Basis of Behavior**

A survey of studies on the neurophysiology and behavior of a variety of organisms, both vertebrate and invertebrate, which provide insight into the means by which nervous systems control behavior. The basic properties of nerve cells, emergent properties of nerve networks, and general theories of brain function will be covered.

*Prerequisite:* Permission of the instructor.

Ms. Nelson

**PSYCHOLOGY 200a and b. Observation and Research Strategies in Psychology**

Staff

**\*PSYCHOLOGY 201a. Seminar in Abnormal Psychology**

**PSYCHOLOGY 203a. Seminar in Sensation and Perception**

The course will cover a graduate level treatment of advanced topics of current theoretical interest in various sensory systems and the implications of this for explaining perceptual phenomena.

Mr. Morant

**PSYCHOLOGY 204b. Contemporary Issues in Psychology**

Ms. McArthur

**PSYCHOLOGY 205a. Seminar in Memory, Attention and Language**

Recent research and theoretical developments in the study of memory as they relate to traditional and contemporary views of selective attention and language in man.

Mr. Wingfield

**\*PSYCHOLOGY 206b. Seminar in Learning**

**PSYCHOLOGY 207b. Seminar in Perception**

A survey of information processing, approaches to perception, perceptual memory and recognition.

Mr. Hershenson

**\*PSYCHOLOGY 208a. Seminar in Thinking and Problem Solving**

**PSYCHOLOGY 210a. Advanced Psychological Statistics**

Descriptive and inferential statistics: t-test, simple analysis of variance, correlating non-parametric tests.

Mr. Arend

\* Not to be given in 1974-75.

## **PSYCHOLOGY 210b. Advanced Psychological Statistics**

Topics to be covered will include: correlation and regression, introduction to matrix algebra, multiple regression, partial and multiple correlation, principles of experimental design, and analysis of variance.

*Prerequisite:* Psychology 210a or permission of the instructor. *Mr. Frederiksen*

## **\*PSYCHOLOGY 212a. Methodology for Research in Personality/Social Psychology**

## **\*PSYCHOLOGY 213a. Quantitative Methods for Personality Research**

## **\*PSYCHOLOGY 214a. History of Psychological Thought**

## **\*PSYCHOLOGY 215a. Psychological Scaling Methods and Theory**

## **PSYCHOLOGY 216a. History of Social Psychology**

A consideration of selected social philosophers and their impact on the development of modern experimental social psychology. Also reading from the theoretical and research literature of the early part of this century. *Mr. Schneider*

## **\*PSYCHOLOGY 217b. Research Seminar in Clinical Psychology**

## **\*PSYCHOLOGY 218a. Seminar in Social Psychology**

## **PSYCHOLOGY 219b. Physiological Psychology**

Study of the neural foundations of behavior. The following will be discussed: electrophysiological analyses of the major sensory pathways; ablation studies; brain stimulation experiments; and the effects of brain surgery and disease in man. *Mr. Lackner*

## **PSYCHOLOGY 220-233. First Research Project**

220a and b.	<i>Mr. Arend</i>	228a and b.	<i>Ms. Nelson</i>
221a and b.	<i>Mr. Frederiksen</i>	229a and b.	<i>Mr. Roff</i>
223a and b.	<i>Mr. Hershenson</i>	230a and b.	<i>Mr. Schimmel</i>
224a and b.	<i>Mr. Knight</i>	231a and b.	<i>Ms. Simmel</i>
225a and b.	<i>Mr. Lackner</i>	232a and b.	<i>Mr. Wingfield</i>
226a and b.	<i>Ms. McArthur</i>	233a and b.	<i>Mr. Wodinsky</i>
227a and b.	<i>Mr. Morant</i>		

## **PSYCHOLOGY 234a. Seminar in Comparative Psychology** *Mr. Wodinsky*

## **PSYCHOLOGY 235b. (Old program) Master's Level Readings for Propositional Review**

In consultation with the appropriate area examination committee, each student chooses two propositions at the beginning of the semester. An extensive written, documented defense of the propositions is submitted to the examination committee by May 1. For certain areas, a literature review may be accepted in lieu of a propositional defense. If the adequacy of the propositional defense or literature review is questioned, then, at the option of either the committee or student, the student will be examined orally on the written material. *Staff*

## **PSYCHOLOGY 240. (Old program) Advanced Level Readings for Propositional Review**

This course differs from Psychology 230b in that it is a full year course. The written defense of the propositions is submitted by April 1 and defended orally before the area examination committee. The committee will go beyond the specific propositions to examine the student in depth so as to evaluate his or her knowledge of the broad area from which the propositions were chosen and in which the stu-

\* Not to be given in 1974-75.

dent intends to do the doctoral dissertation. By petition to the committee the examination may be written. If the propositions chosen or the area of doctoral research cuts across the special areas designated in the catalog, a special area committee will be appointed by the chairman in consultation with the student and his or her faculty adviser.

Staff

### **PSYCHOLOGY 250-263. Second Research Project**

250a and b.	<i>Mr. Arend</i>	258a and b.	<i>Ms. Nelson</i>
251a and b.	<i>Mr. Frederiksen</i>	259a and b.	<i>Mr. Roff</i>
253a and b.	<i>Mr. Hershenson</i>	260a and b.	<i>Mr. Schimmel</i>
254a and b.	<i>Mr. Knight</i>	261a and b.	<i>Ms. Simmel</i>
255a and b.	<i>Mr. Lackner</i>	262a and b.	<i>Mr. Wingfield</i>
256a and b.	<i>Ms. McArthur</i>	263a and b.	<i>Mr. Wodinsky</i>
257a and b.	<i>Mr. Morant</i>		

### **PSYCHOLOGY 280-293. Advanced Readings**

280a and b.	<i>Mr. Arend</i>	288a and b.	<i>Ms. Nelson</i>
281a and b.	<i>Mr. Frederiksen</i>	289a and b.	<i>Mr. Roff</i>
283a and b.	<i>Mr. Hershenson</i>	290a and b.	<i>Mr. Schimmel</i>
284a and b.	<i>Mr. Knight</i>	291a and b.	<i>Ms. Simmel</i>
285a and b.	<i>Mr. Lackner</i>	292a and b.	<i>Mr. Wingfield</i>
286a and b.	<i>Ms. McArthur</i>	293a and b.	<i>Mr. Wodinsky</i>
287a and b.	<i>Mr. Morant</i>		

### **PSYCHOLOGY 400-413. Dissertation Research**

Independent research for the Ph.D. degree.

400.	<i>Mr. Arend</i>	408.	<i>Ms. Nelson</i>
401.	<i>Mr. Frederiksen</i>	409.	<i>Mr. Roff</i>
403.	<i>Mr. Hershenson</i>	410.	<i>Mr. Schimmel</i>
404.	<i>Mr. Knight</i>	411.	<i>Ms. Simmel</i>
405.	<i>Mr. Lackner</i>	412.	<i>Mr. Wingfield</i>
406.	<i>Ms. McArthur</i>	413.	<i>Mr. Wodinsky</i>
407.	<i>Mr. Morant</i>		

## **RUSSIAN**

See Joint Program of Literary Studies (page 94).



# SOCIOLOGY

## Objectives

The graduate program in Sociology is primarily a doctoral program and is designed for students who intend to devote themselves to teaching and research in sociology. The student may, by satisfying certain requirements, receive the M.A. degree. The general objective is to educate students in the major areas of sociology with specialization in several of them.

## Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to the Sociology Department.

In addition, all prospective students are encouraged to submit written material (papers, etc.) representative of their best work, which need not be, however, of a sociological nature.

## Faculty

Associate Professor GORDON A. FELLMAN, *Chairman*: Social psychology. Stratification.

†Professor EGON BITTNER: Sociology of law. Social controls.

Professor Emeritus EVERETT C. HUGHES: Social organization. Race and ethnic relations. Occupations and work systems.

Professor MORRIS S. SCHWARTZ: Social psychology. Social psychiatry.

+++Professor MAURICE R. STEIN: Communities. Sociology of literature.

++Professor KURT H. WOLFF: Sociological theory. Sociology of knowledge.

Professor IRVING K. ZOLA: Deviance. Sociology of health and illness.

Associate Professor CHARLES S. FISHER: Sociology of science. Collective behavior.

Associate Professor ROSABETH MOSS KANTER: Social organization and social psychology. The family and Utopian communities.

Assistant Professor JEROME P. BOIME: Social and political theory; the relation of violence to social structure.

++Assistant Professor CHARLES DERBER: Social psychology. Stratification.

Assistant Professor GILA J. HAYIM: Social and psychological theory. Criminology.

Visiting Assistant Professor KRISTINE M. ROSENTHAL: Developmental psychology and education. Women's studies.

Assistant Professor GEORGE W. ROSS: Political sociology. Social theory.

Assistant Professor CHARLOTTE WEISSBERG: Social psychology and socialization. Sociology of education.

Lecturer CLINTON M. JEAN: Evolution of human social organization. Sociology of underdevelopment.

## Degree Requirements

### Doctor of Philosophy

*Program of Study.* Students entering the Ph.D. program in Sociology are expected to undertake a two-year program of course work, as a part of which they are obliged to take the departmental Pro-Seminar (Sociology 290). The initial program of studies will be arranged in consultation with the Graduate Students' Adviser. Consideration will

† On leave, 1974-75.

++ On leave, Fall Term, 1974-75.

+++ On leave, Spring Term, 1974-75.



be given to graduate work done elsewhere, but formal transfer credit will be assigned only after the successful completion of the first year of study.

*Requirements for the M.A.* An M.A. may be granted after the successful completion of three semesters of course work, passing one foreign language examination, and submission of two substantial research papers to be approved by the department.

*Residence Requirement.* The minimum residence requirement for the degree of Doctor of Philosophy is two years. It is expected that the Ph.D. will be earned within five years.

*Language Requirements.* Candidates for the Ph.D. degree must demonstrate either proficiency in two foreign languages or knowledge of one language in depth. At least one of the languages must be chosen from French, German, Italian, Spanish, or Russian. The choice of the second language is subject to approval by the department. Students may petition to substitute quantitative methods for the second foreign language.

*Qualifying Examinations.* During a student's residency until the time of his or her formal admission to candidacy, the specific planning, evaluations and accreditation of his or her entire course of study will be in the hands of each student's Guidance-Accreditation Committee composed of three faculty members. Along with the student, this committee will lay out a general course of study designed to meet the interests and needs of the student. Upon completion of this course of study and research, the student will take an oral qualifying examination covering both general sociology and the areas of the student's special interests. It is assumed that students will fulfill their accreditation before the end of their third year of residence.

*Admission to Candidacy.* A student shall be eligible for admission to candidacy for the Ph.D. upon fulfillment of the residence requirements, the foreign language requirement, passing the departmental qualifying examination, and submission of an acceptable dissertation proposal. The work on the doctoral dissertation will be supervised by a Dissertation Committee.

*Dissertation and Final Oral Examination.* The Ph.D. dissertation may be accepted by the department upon the recommendation of the Dissertation Committee. To be granted the degree, the student is required to defend the dissertation in a public Final Oral Examination.

## **Courses of Instruction**

**\*SOCIOLOGY 100a. Development of Modern Sociology**

**\*SOCIOLOGY 101a. Sociology of Conflict and War**

**SOCIOLOGY 102a. Social Psychiatry**

Training in peer counseling is offered through classes, supervised sessions with other students, and community work. Theory, social contexts and practice of re-evaluation counseling is stressed. Other social psychiatric approaches are also covered.

*Prerequisite:* Permission of instructor.

*Mr. Stein*

**\*SOCIOLOGY 102b. Social Psychiatry**

**\*SOCIOLOGY 104a. Sociology of Education**

**SOCIOLOGY 106a. Sociology of Literature**

The relations between society and literary forms in selected historical periods. Emphasis on the relations between problems and methods in inquiry as presented by sociological and humanistic students of man.

*Prerequisite:* Permission of the instructor.

*Mr. Stein*

\* Not to be given in 1974-75.

**\*SOCIOLOGY 106b. Sociology of Literature**

**\*SOCIOLOGY 107a. Issues in Social Psychology**

**SOCIOLOGY 107b. Issues in Social Psychiatry**

A critical examination of selected readings of contemporary theorists, including R. White, C. H. Mead, Malinowsky, and T. Parsons. *Mss. Rosenthal and Weissberg*

**\*SOCIOLOGY 108b. Critiques of Contemporary Society**

**\*SOCIOLOGY 109. Inequality and Social Policy**

**SOCIOLOGY 110b. Sociology of Knowledge**

History and historical interpretation of the sociology of knowledge, with particular emphasis on German and recent American literature. *Mr. Wolff*

**SOCIOLOGY 111a. Political Sociology**

Patterns of conflict and consensus and their relationship to political change and stability in contemporary America. Examination of changing views of power and community from New Deal/Cold War/1950's America to the conflicts of the 1960's and deal analytically with issues of power and political socialization. *Mr. Ross*

**SOCIOLOGY 112b. Social Class, Freedom and Equality**

The concept of social class; its role in determining life chances, life styles, income, occupation and power; theories of class and inequality; selected social psychological aspects of social class and inequality; American class structure and dynamics; American social class and imperialism. *Mr. Fellman*

**\*SOCIOLOGY 113b. Social Ecology of the Urban Environment**

**\*SOCIOLOGY 114b. Complex Organizations: Prisons, Corporations and Universities**

**SOCIOLOGY 115a and b. Evolution of Human Social Organization**

The course is concerned principally with the development of social stratification and the state. Discussions will focus on the differences between the institutions (and their effect on human living) that exist in primitive human communities and those that exist in class society. *Mr. Jean*

**\*SOCIOLOGY 116a. Topics in Social History of Black People in America**

**\*SOCIOLOGY 116b. Multi-Ethnic Society**

**\*SOCIOLOGY 117aR. Work and Society**

**SOCIOLOGY 118a. American Jewish Life and Institutions**

See NEJS 161a for description.

*Mr. Sklare*

**SOCIOLOGY 118b. Sociology of the American Jewish Community**

See NEJS 164b for description.

*Mr. Sklare*

**\*SOCIOLOGY 119a. Institutions of a More Humane Society**

**SOCIOLOGY 120a and b. Sociology of Underdevelopment**

The course will discuss underdevelopment of the Third World from the 1500's to the present. Topics will include the origins of underdevelopment; the nature of relations between advanced industrial and Third World countries; the internal economic, social and political structure of Third World societies; and a critical evaluation of different strategies of development. *Mr. Jean*

\* Not to be given in 1974-75.

**SOCIOLOGY 122a. Sociology of Power**

The course analyzes traditional problems of politics in terms of a tension between two social forms—the Civil and the Fraternal. Discussion of modern cultural efforts to resolve this tension.

*Mr. Boime*

**SOCIOLOGY 125a. Quantitative Methods in Research**

An introduction to quantitative research methodology with emphasis on selected methods of data collection, analysis and interpretation. Includes a section on descriptive statistics.

*To be announced*

**\*SOCIOLOGY 126a. Sociology of Deviance****\*SOCIOLOGY 126b. The Institutions of Social Control****\*SOCIOLOGY 127b. Deviant Communities****\*SOCIOLOGY 129a. The Urban Family****SOCIOLOGY 130a. The Family (Micro-Social Perspectives)**

Exploration of the structure and dynamics of the American family, along with historical and cross-cultural perspectives. Particular attention to the role of women and children in society. Relationship of the family to economic and political institutions. Alternative models for family life including communes.

*Ms. Kanter*

**SOCIOLOGY 130b. The Family (Macro-Social Perspectives)**

*Ms. Kanter*

**SOCIOLOGY 132a and b. Urban Sociology: Field Studies in Social Class**

Field investigations of social class in American lower, working, middle and upper class settings. Class sessions will discuss field observations and students' reactions to field experiences.

*Mr. Fellman*

**\*SOCIOLOGY 133b. Comparative Urban Cultures****SOCIOLOGY 135a. Group Process**

Interpretation of interpersonal behavior and group development, based in part on observation of the discussion group itself. Readings will include material from psychology and social anthropology as well as sociology.

Enrollment limited to twelve students.

*Mr. Schwartz*

**SOCIOLOGY 135aR. Group Process**

Enrollment limited.

*Mr. Derber*

**SOCIOLOGY 135b. Advanced Group Process**

This course will try to develop a deeper understanding of the nature of interpersonal relations and group dynamics. Experience in the group and selected readings will be used to conceptualize the connections between intra-psychic, interpersonal, and group processes.

*Prerequisite:* Sociology 135a and permission of instructor.

*Mr. Schwartz*

**\*SOCIOLOGY 138a and b. War and Revolution****SOCIOLOGY 141a Marx and Freud**

This course stresses Marxian and Freudian treatments of human nature, human potential, social stability, conflict change, consciousness, social class, and the relationship between family and social process. Topics of contemporary importance will be reviewed in the light of both traditions. Attempts to combine the two approaches will be examined.

*Messrs. Fellman and Ross*

\* Not to be given in 1974-75.

**SOCIOLOGY 141b. Advanced Seminar on Marx and Freud**

Continuation of Sociology 141a on an advanced level, for more intensive study of the issues raised there.

*Prerequisite:* Permission of the instructors.

Enrollment limited.

*Messrs. Fellman and Ross*

**\*SOCIOLOGY 142a. Social Psychology: Psychoanalytic Theory and Society**

**SOCIOLOGY 143aR. Studies in Social Interaction and the Self**

Consideration of the underlying forces shaping social interaction with a focus on self-analysis and the interpersonal styles associated with different character structures. Interaction within small group setting will be used to facilitate understanding of linkages between personality and social interaction.

*Mr. Derber*

**\*SOCIOLOGY 143b. Advanced Studies in Social Interaction and the Self**

**SOCIOLOGY 145a. Sociology of Life Styles**

Exploring the meaning of social class membership as it is communicated through the process of socialization. Discussion of the effects of education, use of language, political status and differential aspects of family life. Selected readings in social psychology and child development.

*Ms. Rosenthal*

**\*SOCIOLOGY 147a and b. Social Psychology of Organizations and Groups**

**\*SOCIOLOGY 148a and b. Social Psychology of Consciousness**

**SOCIOLOGY 150aR. Sociology of Revolutionary Change**

Comparative study of revolutionary change. The Chinese, Cuban and Algerian revolutions will be examined with emphasis on pre-revolutionary social structure, social disintegration and actual revolutionary processes and post-revolutionary situations. Reading will be drawn from historical sociology, revolutionary theory (Mao, Lenin, Debray, Fanon).

*Mr. Ross*

**SOCIOLOGY 151b. Environmental Research**

This course will consist of a research project cooperatively conceived, designed, executed and analyzed by the students. Class meetings will scrutinize the process of each stage of research, from the initial conception of the problem to methods employed in research design and data interpretation.

*Prerequisite:* Permission of instructor.

*Ms. Weissberg*

**SOCIOLOGY 152b. Sociology of Generations: The Adolescent in Society**

An exploration of the dynamics of adolescent development in relationship to the experience of the preceding generation and the contemporary social environment. The readings will focus on current theories of adolescent behavior and its sociological correlates.

*Ms. Rosenthal*

**\*SOCIOLOGY 154b. Sociology of Science**

**SOCIOLOGY 155b. Social Movements**

Consideration of the social and psychological histories of such movements as the Wobblies, the American Communist Party, the Civil Rights Movement, and the New Left. Analysis focuses on their historical and interactional contexts and their effect on American society. Other cultural and religious movements will be examined.

*Mr. Fisher*

**\*SOCIOLOGY 160a and b. Sociology of Art: Afro-American Art, Literature, Music, and Theater. World as View and World as Event.**

\* Not to be given in 1974-75.

**\*SOCIOLOGY 161a. Historical Sociology: An Exploration of the Black Presence in American History**

**\*SOCIOLOGY 162b. Sociology of Language and Communication**

**SOCIOLOGY 163b. Therapy and Punishment**

Critical analysis of contemporary thought and practices in the field of correction. Study of the legal and social-psychiatric dilemmas with respect to the treatment of crime and mental illness and the current research in the biology of violence and behavior modifications.

*Prerequisite:* Permission of the instructor.

*Ms. Hayim*

**SOCIOLOGY 164aR. Existential Sociology**

Introduction to existential thought and its integration with selected sociological theories on human interaction and anxiety, individual freedom, options for social reorganization and the socio-historical implications of growth, crisis and death.

*Ms. Hayim*

**SOCIOLOGY 169a. Religion and Ethnicity in American History**

See American Civilization 169a.

*Mr. Fuchs*

**SOCIOLOGY 172b. The Family in the United States**

See American Studies 150b.

*Mr. Fuchs*

**\*SOCIOLOGY 188b. Sociology of Law**

**\*SOCIOLOGY 190b. Social Organization of Medical Settings**

**\*SOCIOLOGY 191a. Health, Community, and Society**

**\*SOCIOLOGY 192. Sociology of the Medical Professions**

**SOCIOLOGY 200a and b. Classical Sociological Theory**

How major schools of sociological thought are justified from both an analytical and historical point of view.

*Mr. Boime and Ms. Weissberg*

**SOCIOLOGY 203a and b. Field Methods in Sociological Research**

Intensive practice in sociological observation and concentrated field work along with readings and discussion of the theoretical issues involved.

*Mr. Fisher*

**\*SOCIOLOGY 204b. Sociology and History**

**\*SOCIOLOGY 207a. Issues in Higher Education Seminar**

**\*SOCIOLOGY 208c. Seminar on Applied Sociology**

**\*SOCIOLOGY 209b. The American Working Class**

**SOCIOLOGY 211a Research on Women and Society**

A forum for students engaged in or interested in doing sociological research on women. Meetings will consist of discussion and criticism of students' projects; emphasis will be placed on research design and methods, and on the different areas of inquiry.

*Ms. Weissberg*

**\*SOCIOLOGY 216a. Seminar in Social Theory**

**SOCIOLOGY 216b. Seminar in Social Theory**

An advanced seminar in social theory dealing with selected problems. *Mr. Ross*

\* Not to be given in 1974-75.

**\*SOCIOLOGY 217a and b. Problems and Concepts in Medical Sociology and Deviance**

**SOCIOLOGY 220b. Seminar on the Sociology of Politics**

Treats of the alternate forms of community that are possible under political order.  
*Mr. Boime*

**SOCIOLOGY 222a. Utopia and Utopian Communities**

Examination of utopias, communes, and communal alternatives through historical, contemporary and cross-cultural materials.  
*Ms. Kanter*

**\*SOCIOLOGY 225a and b. Community Sociology**

**SOCIOLOGY 226a. Theories in Social Psychology**

Intensive examination of major theories of group process, interpersonal relationships, the self and society, and social interaction. Theorists considered will include Cooley, Mead, Dewey, Goffman, Bateson, Laing and Buber.  
*Mr. Schwartz*

**SOCIOLOGY 227b. Group Process Seminar**

*Mr. Schwartz*

**SOCIOLOGY 228aR. Some Pre-Theoretical Problems of Sociology**

An introduction to phenomenology in its bearing on social science and especially sociology through an intensive study of Alfred Schutz.  
*Mr. Wolff*

**SOCIOLOGY 229b. Seminar on the Family**

Advanced reading, research, and discussion on family process and organization. Focus on internal dynamics of the family and on the family as a social institution in many societies and historical times. Class will undertake individual or collective research projects.  
*Ms. Kanter*

**SOCIOLOGY 230-249a and b. Readings in Sociological Literature**

*230a and b.	242b.	<i>Mr. Wolff</i>
231a and b.	243a and b.	<i>Mr. Zola</i>
232b.	244a and b.	<i>Mr. Kecskemeti</i>
233a and b.	245a and b.	<i>Mr. Jean</i>
234a and b.	246a and b.	<i>Ms. Hayim</i>
236a and b.	247a and b.	<i>Ms. Rosenthal</i>
238a and b.	248a and b.	<i>Mr. Hughes</i>
239a and b.	249a and b.	<i>Ms. Weissberg</i>
240a.		

**SOCIOLOGY 254a and b. Casting and Forecasting of Medical Roles**

Focus will be on the newly evolving role of medicine as an institution of social control. We envision a cluster of loosely related research projects which will seek to mobilize evidence either for or against our hypothesized shift in the institutional and ideological underpinning of social control.

*Prerequisite:* Permission of instructor.

*Mr. Zola*

**SOCIOLOGY 255a. Seminar in Urban Studies**

Social class as analytic tool in understanding American society, community studies, problems of status and mobility, other societies, imperialism.  
*Mr. Fellman*

**\*SOCIOLOGY 259a. Health and Illness in the Spanish-Speaking Community**



### **SOCIOLOGY 290c. Pro-Seminar**

A seminar meeting once a week in which the faculty introduces their interests and research.

*Required of all first year graduate students.*

*Mr. Ross and Staff*

### **SOCIOLOGY 300c. Colloquium**

The purpose of the colloquium is to give staff members, sociologists from other institutions, and post-M.A. students the opportunity to present current research, tentative hypotheses, and more general ideas and positions concerning the study of society.

*Mr. Ross*

### **SOCIOLOGY 301. Advanced Field Research**

A second year course in methods of field research. Students will be placed as participant observers in a number of different institutions and will be individually supervised in their field work guidance and use the seminar as a place to discuss research dissertation problems.

*Staff*

### **SOCIOLOGY 400. Dissertation Research Seminar**

Open to all advanced students.

*Staff*

### **SOCIOLOGY 401-420. Dissertation Research**

Independent research for the Ph.D. degree.

401. Mr. Bittner

402. Mr. Boime

403. Mr. Derber

404. Mr. Fellman

405. Mr. Fisher

407. Mr. Hughes

408. Ms. Kanter

410. Mr. Ross

411. Mr. Schwartz

412. Mr. Stein

414. Mr. Wolff

415. Mr. Zola

416. Mr. Kecskemeti

417. Mr. Jean

418. Ms. Hayim

419. Ms. Rosenthal

420. Ms. Weissberg

## **SPANISH**

See Joint Program of Literary Studies (page 94).

# THEATER ARTS

## Objectives

The Master of Fine Arts Program in Theater Arts is designed both to train and to educate—to develop skilled craftsmen of knowledge and judgment about the art.

The curriculum combines professionally oriented training in four theatrical disciplines—*Acting, Directing, Design/Technical* and *Dramatic Writing*—with graduate level study in dramatic theory and literature. The production program provides extensive practical experience for all students on and behind the stages of the three Spingold theaters, where the actors act, the directors direct, the designers design and construct, and the playwrights have the opportunity to see their accepted plays performed by casts which may include professional actors-in-residence.

## Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. When applying, students must define their area of concentration: namely, acting, directing, design/technical, or dramatic writing. Besides the standard application materials, the department requires an audition for applicants in acting and directing, submission of a portfolio for design/technical applicants and submission of an original script (or other example of creative writing) for dramatic writing applicants. Information about times and places for auditions, and the type of audition material to be prepared, will be furnished by the department in the fall.

Admission is granted for one academic year at a time. Students in residence must make formal application for readmission to the Graduate School by February 1 of their first year in residence.

## Faculty

Associate Professor MARTIN HALPERN, *Chairman*; Professors HOWARD BAY, THEODORE L. KAZANOFF; Visiting Professor ISRAEL HOROVITZ; Associate Professors JAMES H. CLAY, MAUREEN HENEGHAN, CHARLES W. MOORE; Assistant Professor PETER M. SANDER; Visiting Assistant Professor MURIEL RITA DOLAN; Lecturers DAVID S. HOWARD, ROBERT O. MOODY, JR., ANNE TOLBERT.

Part-time Teaching Staff: WALTER DOLAN, BARRY ODOM, HENRY SPARKS.

## Degree Requirements

### Master of Fine Arts

*Residence Requirements.* Normally, two years in acting, directing and dramatic writing, and three years in design/technical.

*Program of Study.* The program of study varies for each specialty as given below.

*Dramatic Theory and Literature Requirement:* Students in all disciplines, if they do not elect Theater Arts 202 in their second year, are required to pass a general examination in the basic materials of dramatic theory and literature. This examination may be taken at any time during the student's residence, and in case of failure, may be repeated once. However, if a student elects Theater Arts 202 and successfully completes the course, this will fulfill the theory and literature requirement.



## Programs of Study

### ACTING

*Required Courses First Year:*

- THEATER ARTS 203. Advanced Acting Studies: I** Mr. Moore, Fall Term  
Mr. Kazanoff, Spring Term
- THEATER ARTS 207. Body Movement for the Actor: I** Mr. Howard, Fall Term  
Ms. Tolbert, Spring Term
- THEATER ARTS 209. Speech Studies for the Actor: I** Ms. Dolan

One elective course each semester in dramatic theory or literature and Theater Arts 225.

*Required Courses Second Year:*

- THEATER ARTS 204. Advanced Acting Studies: II** Mr. Kazanoff, Fall Term  
Mr. Moore, Spring Term
- THEATER ARTS 208. Body Movement for the Actor: II** To be announced
- THEATER ARTS 210. Speech Studies for the Actor: II** Ms. Dolan

Either Theater Arts 202 or one elective course each semester in dramatic theory or literature, and Theater Arts 226.

*Performance and Production Requirements:* Concentrators in acting are required to audition for and perform as cast in all major productions in Theater I and Theater II, unless excused by the chairman after consultation with the director. They will usually perform in at least two major productions each year. They are also required to serve on the crew for one major department production each year (approximately sixty hours). Fulfillment of this requirement will be certified by a "Credit" grade in the production laboratory courses, Theater Arts 225 and 226.

### DIRECTING

*Required Courses First Year:*

- THEATER ARTS 203. Advanced Acting Studies: I** Mr. Moore, Fall Term  
Mr. Kazanoff, Spring Term
- THEATER ARTS 213. Advanced Directing** Mr. Kazanoff

Two elective courses each semester.

*Required Courses Second Year:*

- THEATER ARTS 202. Graduate Seminar in Dramatic Theory and Literature** Mr. Halpern
- THEATER ARTS 204. Advanced Acting Studies: II** Mr. Kazanoff, Fall Term  
Mr. Moore, Spring Term
- THEATER ARTS 310. Thesis Projects** Staff

One elective course each semester.

*Performance and Production Requirements:* First Year: Direction of two workshop productions in Theater III.

Stage managing of one Theater I production. Audition for and play as cast in all major productions scheduled at times other than those in which the directing and stage managing requirements are being met, unless excused by the chairman after consultation with the director.

Second Year: Direction of two major productions, normally in Theater II. One of these will usually be a new play.

## DESIGN-TECHNICAL

### *First Year:*

<b>THEATER ARTS 211. Scenic Design: I</b>	<i>Mr. Bay</i>
<b>THEATER ARTS 214. Costume Construction</b> Laboratory fee: \$10.00.	<i>Mr. Odom</i>
<b>THEATER ARTS 217. Costume Design</b>	<i>Ms. Heneghan</i>
<b>THEATER ARTS 219. Lighting Design: I</b>	<i>Mr. Sparks</i>
<b>THEATER ARTS 221. Sketching and Rendering: I</b>	<i>Mr. Moody</i>
<b>THEATER ARTS 223. Scenic Painting: I</b> Laboratory fee: \$10.00 per semester.	<i>Mr. Moody</i>
<b>THEATER ARTS 225. Production Laboratory: I</b>	<i>Mr. Dolan</i>

### *Second Year:*

<b>THEATER ARTS 212. Scenic Design: II</b>	<i>Mr. Bay</i>
<b>THEATER ARTS 218. Advanced Costume Design</b>	<i>Ms. Heneghan</i>
<b>THEATER ARTS 220. Lighting Design: II</b>	<i>Mr. Bay</i>
<b>THEATER ARTS 224. Stage Mechanics</b> Laboratory fee: \$5.00	<i>Mr. Dolan</i>
<b>THEATER ARTS 226. Production Laboratory: II</b>	<i>Mr. Dolan</i>
<b>THEATER ARTS 227. Sketching and Rendering: II</b>	<i>Mr. Moody</i>
<b>THEATER ARTS 228. Scenic Painting: II</b> Laboratory fee: \$10.00 per semester.	<i>Mr. Moody</i>

One elective course each semester in dramatic theory or literature.

### *Third Year:*

<b>THEATER ARTS 300. Directed Study and Field Work</b>	<i>Staff</i>
<b>THEATER ARTS 310. Thesis Projects</b>	<i>Staff</i>

One elective course each semester in dramatic theory or literature, or Theater Arts 202.

*Thesis Project and Participation in Productions:* The graduate design thesis is the final problem in the design/technical program. It is the full presentation of projected designs for the scenery, costumes and lighting for a specific play or opera presented in portfolio form, with the emphasis depending upon the student's major field of interest—sets, lighting, or costumes. In some cases, a student's main-stage design assignments in the second or third year may constitute part of the thesis project.

All major productions are designed by graduate students. Therefore, a student may be expected to be involved in a design capacity on at least three productions during each year. In addition, students will participate on various production crews as arranged in conference with the design faculty.

## DRAMATIC WRITING

*First Year:*

**THEATER ARTS 215. Seminar in Dramatic Writing: I** *Mr. Horovitz*

Two elective courses each semester, and Theater Arts 225.

*Second Year:*

**THEATER ARTS 216. Seminar in Dramatic Writing: II** *Mr. Horovitz*

**THEATER ARTS 310b. Thesis Play** *Staff*

**THEATER ARTS 202. Seminar in Dramatic Theory and Literature: II** *Mr. Halpern*

One elective course in the first semester and Theater Arts 226.

*Performance and Production Requirements.* Playwriting students are required to participate in the preparation of any studio, workshop, or major production of their plays mounted during the time they are in residence. They are also required to participate in two other departmental productions each year—either as performers or on production crews (approximately sixty hours of crew assignment). Fulfillment of this requirement will be certified by a “Credit” grade in the production laboratory courses, Theater Arts 225 and 226.

### Elective Courses Available to Graduate Students:

**THEATER ARTS 122a. Modern Drama**

The major European dramatists from the mid-nineteenth century through the 1920's, including Ibsen, Strindberg, Chekhov, Synge, Shaw, and Pirandello.

Enrollment limited to 100 students.

*Mr. Halpern*

**THEATER ARTS 123b. Contemporary Drama**

Continental, British and American dramatists from the 1920's to the present, including Brecht, Lorca, Giraudoux, Sartre, Beckett, Genet, Eliot, Deurrenmatt, O'Neill, Albee, and Weiss.

Enrollment limited to 100 students.

*Mr. Halpern*

**THEATER ARTS 124a. Shakespeare**

See English 3a for description.

*Mr. Levitan*

**THEATER ARTS 124aR. Shakespeare**

See English 3aR for description.

*Mr. Smith*

**THEATER ARTS 124b. Shakespeare**

See English 3b for description.

*Mr. Levitan*

**THEATER ARTS 125a. History of American Drama**

See American Studies 125a for description.

*Mr. Matthews*

**THEATER ARTS 135b. The Popular Arts**

See American Studies 135b for description.

*Mr. Matthews*

**\*THEATER ARTS 165a. Greek Drama**

To be given in 1975-76.

**THEATER ARTS 170b. Elizabethan and Jacobean Drama**

See English 142b for description.

*Mr. Smith*

**THEATER ARTS 171a. Music and Drama Criticism**

See Music 171a for description.

*Mr. Titcomb*

**THEATER ARTS 180a and b. Seminar in Production Concepts**

Each student does an in-depth study of the social and theatrical contexts of two non-contemporary plays, a study leading to production concepts which interpret the plays for today's audiences.

*Prerequisite:* Permission of the instructor.

*Mr. Clay*

**THEATER ARTS 186b. Twentieth Century British Drama**

See English 186b for description.

*Mr. Swiggart*

**THEATER ARTS 222. Drafting**

Laboratory fee: \$5.00.

*Mr. Dolan*

\* Not to be given in 1974-75.



# Fellowships—1974-1975

*Viola G. and Michael Addison Fellowship Endowment* (1966) Established in honor of becoming a Fellow of the University by Mrs. Michael Addison of New York. The income will provide fellowships for outstanding and deserving students who are doing their advanced work at the University.

*Ethan Allen Scholarships and Fellowships* (1971) Established by friends and associates of Nathan S. Ancell in honor of his induction as a Fellow of Brandeis University.

*Ethan Allen Fellowship in Honor of Ralph Levitz* (1972) Granted in honor of the induction of Ralph Levitz as a Fellow of the University by Mr. Nathan Ancell of New Rochelle, New York, to offer fellowship assistance to outstanding graduate students.

*American Friends of Hebrew University Lown Fellowship Program* (1967) An exchange fellowship program through The Hebrew University supported by Mr. Philip W. Lown of Boston, Massachusetts.

*The Artkraft-Strauss Sign Corporation Fellowship* (1969) Established by the Artkraft-Strauss Sign Corporation of New York City, to offer fellowships to outstanding students who are pursuing advanced studies at the Graduate School.

*Association of Electrical Contractors, Inc. Fellowship* (1969) Established by the Association of Electrical Contractors, Inc. of New York City, New York, to offer a fellowship stipend to an outstanding graduate student.

*Ruth and Elmer J. Babin Scholarship and Fellowship Endowment Fund* (1973) Granted by Mr. and Mrs. Elmer J. Babin of Cleveland, Ohio, to offer scholarship aid to worthy and deserving undergraduate and graduate students.

*George Barr Fellowship Endowment* (1966) Established by Mr. George Barr of Niles, Illinois, to aid a gifted graduate student.

*Barwick Furniture Fellowship Fund* (1972) A tuition and maintenance fellowship fund established by Barwick Furniture Ltd. of Chamblee, Georgia in honor of Ralph Levitz, to offer fellowship grants to outstanding graduate students.

*Beech-Nut Life Savers, Inc. Fellowship* (1962) Established to support fellowship assistance for deserving graduate students through a grant from Beech-Nut Life Savers, Inc. of New York City.

*David and Paula Ben-Gurion Israeli Fellowship Fund* (1967) Established by Brandeis University in honor of their fiftieth wedding anniversary, to enable an Israeli graduate student to spend a year at Brandeis.

*Samuel J. Bernstein Fellowship* (1967) Established by Leonard Bernstein in honor of the seventy-fifth birthday of his father, Samuel J. Bernstein, to aid a graduate student in Judaic Studies.

*Lewis Bloom Scholarship and Fellowship Fund* (1973) Established in honor of Mr. Lewis Bloom of New York City by friends and associates to offer financial aid to worthy and deserving students.

*Allan I. Bluestein Fellowship* (1960) Established by Allan I. Bluestein through the Jacob Bluestein Foundation, Inc. of New York, to assist deserving students in the field of the humanities, particularly in literature, history and language.

*Jacob and Rachel Bluestein Memorial Fellowship* (1960) Established by Allan I. Bluestein through the Jacob Bluestein Foundation, Inc. of New York, in memory of his parents, to assist gifted students in the field of the humanities.

*Marie and Alva T. Bonda Fellowship Fund in Gerontology* (1972) Granted by Mr. and Mrs. Alva T. Bonda of Cleveland, Ohio, to offer fellowships to gifted graduate students for study and research in the field of Gerontology.

*Brandeis University-Bethune-Cookman College Fellowship* (1969) An annual fellowship to be granted to a gifted graduate of Bethune-Cookman College, Daytona Beach, Florida, for advanced study at Brandeis University Graduate School of Arts and Sciences.

*Lowell and Frances Hyams Brentano Fund* (1972) Granted through a bequest from the estate of Frances H. Brentano, New York. The income to be awarded each year to such graduate students who show special aptitudes and abilities in the social sciences, giving preference to someone who suffers from some physical handicap or disabling disease.

*Otto and Mynette Bresky Fellowship Endowment* (1962) Established by Mr. and the late Mrs. Otto Bresky of Newton, Massachusetts, the income of which will help to subsidize the graduate education of a gifted and worthy student.

*Milton H. and Audrey P. Callner Fellowship Fund in International Affairs* (1966) Established with funds provided under the will of Milton H. Callner, late of Chicago, Illinois, supplemented with matching funds from the Ford Foundation grant, the income to be used for annual fellowships in international affairs or politics.

*Joseph and Frances Reitman Caplan Fellowship Endowment* (1965) Established in memory of her husband by Frances Reitman Caplan of New York City, the income to be used for the assistance of deserving students and for the promotion of studies that are preparation for a legal career, with special emphasis in the field of international law.

*Patrick J. Clifford Scholarship and Fellowship Program* (1968) Established to honor Patrick J. Clifford, to aid outstanding students.

*Patrick J. Clifford Fellowship* (1970) Granted by Mr. Patrick J. Clifford of Huntington, Long Island, to offer fellowship aid to an outstanding graduate student.

*Maxfield J. and Lillian R. Cohen Fellowship Endowment* (1965) Established by Mrs. Lillian R. Cohen of Los Angeles, California, in loving tribute to her late beloved husband, Maxfield J. Cohen. The income from this fund will provide assistance to graduate students selected by the University to help them complete advanced training.

*Karen and Arthur G. Cohen Scholarship and Fellowship Fund* (1973) Granted by family, friends, colleagues and associates of Arthur G. Cohen in honor of his induction as a Trustee of Brandeis University, to offer scholarship and fellowship support to deserving young scholars.

*Rose and Joseph H. Cohen Fellowship* (1962) Established under the terms of a bequest of Joseph H. Cohen, late of New York. The income will provide assistance for students doing their advanced work in Judaic Studies at Brandeis University.

*Jack Cohn Memorial Science Fellowships* (1962) Established by the Artists Foundation, Inc. of New York City (Mr. Robert Cohn, President), in memory of the late Jack Cohn, to provide three fellowships annually on the basis of merit and need, to students enrolled in the Graduate School in the area of science.

*Joan Crawford Fellowship in Theater Arts* (1968) Established by friends and colleagues of Miss Crawford in honor of her induction as a Fellow of Brandeis University. To be awarded to an outstanding Theater Arts graduate student.

*The Irving and Rose Crown Fellowships in American Studies* (1969) Established by the Crown families of Chicago, Illinois, and the Arie and Ida Crown Memorial. This generous endowment offers fellowships to outstanding graduate students who are concentrating in American Studies.

*Dan Danciger Graduate Fellowship Trust Fund* (1958) Established through a bequest from the estate of the late Dan Danciger of Fort Worth, Texas, to provide fellowship assistance for graduate students of outstanding academic potential to enable them to pursue academic careers regardless of financial limitations.

*Sadie and Joseph Danciger Fellowship Endowments* (1967) To be granted to a student in the Philip W. Lown Graduate Center for Contemporary Jewish Studies who is engaged in Jewish communal service and educational work or pursuing research in Contemporary Jewish Studies. Established by Harry L. Jacobs, Arthur Mag and Commerce Bank of Kansas, as Trustees of the Sadie Danciger Fund, established under her last will and testament.

*Daystrom Furniture Fellowship Fund* (1972) A full tuition and maintenance fellowship granted in honor of Ralph Levitz by Daystrom Furniture Inc., to be awarded to an outstanding graduate student.

*Ezra and Rita Denerstein Fellowship* (1971) Established by Mr. and Mrs. Denerstein of New York, to offer fellowship aid to worthy and deserving students in the Benjamin S. Hornstein Program for Jewish Communal Service.

*Frank J. Doft Memorial Fellowship Endowment* (1965) Established as a memorial to their son and brother by the Doft Family of Lawrence, Long Island, New York. The income will provide fellowships for deserving graduate students who are concentrating in the life sciences.

*Eastman Kodak Fellowships in Chemistry* (1974) Granted by the Eastman Kodak Company, Rochester, New York, to assist and encourage graduate education and research in the Department of Chemistry.

*James L. Earley Scholarship and Fellowship Fund* (1974) Granted by friends and associates in honor of Mr. James L. Earley's induction as a Fellow of Brandeis University. This fund will offer scholarship and fellowship aid to worthy and deserving students.

*The Esther Eig Fellowship Fund* (1967) Established by Mr. Samuel Eig of Gaithersburg, Maryland, to assist graduate students.

*Max and Frances Elkon Fellowship Endowment* (1962) Established by Mr. and Mrs. Max Elkon of New York City. The income is used to provide fellowship assistance for gifted graduate students.

*The Kate Ernst Fellowship* (1972) Granted by Mrs. Kate Ernst of North Miami, Florida, in honor of the induction of Ralph Levitz as a Fellow of the University, to offer fellowship aid to outstanding graduate students.

*Rabbi Abraham Joseph and Leah Factor Fellowship Fund* (1959) Granted by Mr. John Factor of Beverly Hills, California, to offer fellowship assistance to graduate students in the field of Judaic Studies.

*Leonard L. Farber Fellowship in Urban and Regional Studies* (1967) Established by friends and business associates to promote graduate study in these fields.

*Bonnie Feiner Memorial Fellowship* (1969) To be granted to an outstanding graduate student who is doing research in the medical sciences, preferably in the field of cancer. Established in loving memory of their young daughter by Barry B. Feiner '56 and Ellen Feiner '57 of New York City.

*Suzanne Feld Memorial Fellowships in Psychology* (1974) Granted by Mr. Milton W. Feld of Kansas City, Missouri, as a memorial tribute to his daughter. This fund will offer fellowships to graduate students in the field of Psychology.

*Harold L. Fierman Fellowship* (1969) Granted by Mrs. Harold L. Fierman of New York City in honor of the induction of her husband as a member of the Board of Trustees of Brandeis University, to be used for graduate study at the Fierman School of Chemistry.

*Irving Fine Fellowship for Music Composition* (1970) Granted through a bequest from the estate of George Fine, Chestnut Hill, Massachusetts. This fellowship will assist a graduate student in the field of Music who is a composer or interested in becoming a composer.

*First Interoceanic Corporation Fellowship* (1970) Granted by Mr. Dwayne Andreas of First Interoceanic Corporation of Minneapolis. To offer fellowship stipends to outstanding graduate students.

*Henry F. Fischbach Fellowship Fund* (1967) Established by the family of Henry F. Fischbach of New York to honor his seventh-fifth birthday. The endowment trust will support an interchange of graduate students between the Israel Institute of Technology (Technion) and Brandeis University.

*Martin Fisher Endowment Fund for Physics* (1970) Granted by Mr. Martin Fisher of New York City, the income therefrom to support scholarships and fellowships for worthy and deserving students in the Martin Fisher School of Physics.

*William S. Fishman Fellowships in Politics* (1972) Established by Mr. William S. Fishman of Philadelphia, Pennsylvania, to offer fellowship assistance to graduate students in the field of Politics.

*Charlotte and Elliot Fleisher Fellowship Endowment* (1966) Established by Mr. and Mrs. Elliot Fleisher of Newton, Massachusetts, the income to be used to provide fellowship grants to aid young men and women of unusual talent or potential to pursue graduate studies within any academic department of the University or within any disciplinary program.

*F. Julius Fohs Memorial Tuition Fellowship* (1967) Established by the Fohs Foundation of Roseburg, Oregon, to benefit an Israeli student concentrating in the applied sciences.

*Leo Gerstenzang Science Fellowship Endowment Fund* (1962) Established by his wife of New York City and Palm Beach, Florida, in memory of her late husband. The income will be used for fellowships to subsidize graduate education and research for deserving graduate students in the field of science.

*Gillette Graduate Teaching Fellowships* (1967) Created by the Gillette Company of Boston to provide tuition and living stipends for five doctoral candidates in the sciences.

*Harry and Elka Gitlow Fellowship Endowment in Humanistic Studies* (1959) Established by Mr. Albert Gitlow of New York City and members of the family as a memorial tribute.



*Pincus Glickman Fellowship in Judaic Studies* (1957) An endowment established by Louis J. Glickman of New York City in memory of his father and augmented through gifts of friends and associates, the income to support the teaching of an advanced graduate student.

*Glidden-Durkee Graduate Fellowship in Biochemistry* (1962) A graduate fellowship established by Glidden-Durkee, Division of SCM Corporation, for support of a deserving graduate student in Biochemistry. This fellowship will provide a grant to the student, payment of tuition and an allowance for each dependent.

*Beatrice I. and Jacob Goldberg Fellowship Endowment Fund* (1962) Established by Mr. and Mrs. Jacob Goldberg of Brookline, Massachusetts, in honor of their fiftieth wedding anniversary. The income from this fund is to be used to support fellowships.

*Mollie Goldberg Memorial Fellowship Endowment* (1963) Established as a memorial tribute by Isadore J. Goldberg of Chicago, and Milton D. Goldberg of Glencoe, Illinois. The income will be used to provide an annual fellowship for a deserving student in the Florence Heller Graduate School for Advanced Studies in Social Welfare.

*Alexander Goldstein Teaching Fellowship in Social Science* (1950) The income from this fund will be used to support a teaching fellowship in the field of social science. Established as a memorial to her brother by the late Miss Lutie Goldstein of San Francisco, California.

*Edward Goldstein Teaching Fellowship* (1954) A grant from Mr. Edward Goldstein of Boston, Massachusetts, to support a teaching fellowship.

*The Samuel Goldwyn Life Science Fellowship Endowment* (1970) Established by the Samuel Goldwyn Foundation of Los Angeles to provide aid to gifted graduate students in the life sciences. Preference is to be given to foreign born, needy applicants who are seeking advanced study in the United States.

*Abraham Goodman Fellowship in the Judaic Department* (1973) Established by Mr. Abraham Goodman of Boston, Massachusetts, to offer fellowship support to graduate students in the field of Contemporary Jewish Studies.

*The James Gordon Grant for Government Fellowship* (1967) Established by the James Gordon Grant for Government of Chicago, Illinois, to aid qualified fellows in this field.

*Maurice Gordon Music Fellowship Endowment* (1966) Established by Mr. Maurice Gordon, Newton, Massachusetts, to provide fellowships for students with preference given to those majoring in music.

*Paul and Hattie Gordon Fellowship in Social Sciences for Graduate Students* (1969) Granted by Mr. Paul R. Gordon of Miami Beach, Florida, the income to be used for financial assistance to graduate students in the area of social sciences.

*Grace Foundation Fellowship in Chemistry* (1967) Established by the Grace Foundation of New York for advanced work in teaching and research in chemistry.

*Anna C. Greenstone Memorial Fellowship* (1952) Established by her children, Mr. Charles R. Greenstone of San Francisco, California, the late Mr. Stanford M. Green of San Francisco, California, and Mrs. Simon Rubin of New Bedford, Massachusetts.

*Flora Grunebaum Endowed Fellowship in Astrophysics* (1972) Granted by Mrs. Flora Grunebaum of Boston, Massachusetts, to offer annual fellowships to gifted graduate students who are concentrating in Astrophysics.

*Leo Haas and Irene Haas Tuition Fund Fellowship* (1967) Established through a bequest of the late Leo Haas of Tucson, Arizona, the income to be used for needy graduate students.

*Edward Hano Fellowship Endowment* (1958) The income from this fund is to provide supplementary fellowship assistance to gifted graduate students enrolled in the Florence Heller Graduate School for Advanced Studies in Social Welfare. A tribute to the late Edward Hano of Granby, Massachusetts, by his wife and members of the family.

*The W. Averell Harriman Fellowship Awards* (1974) Granted by The Honorable W. Averell Harriman of Washington, D. C., to offer fellowship support to gifted and needy graduate students.

*Mary and Abbey Hirschfield Fellowships in the Humanities* (1971) Granted through a bequest from the Estate of Mary Hirschfield, Chestnut Hill, Massachusetts to offer fellowship assistance to graduate students in the Humanities.

*Edwin E. Hokin Teaching Fellowship Endowment* (1967) Established by his friends in honor of Edwin E. Hokin of Chicago, Illinois, becoming a Fellow of the University. The income will provide assistance for deserving graduate students.

*M. Z. and Hannah Holland Fellowship Endowment* (1964) Established by the family and friends of Mr. and Mrs. M. Z. Holland of Chicago, Illinois, to honor their fiftieth wedding anniversary and, also, Mr. Holland's seventy-seventh birthday. The income from this fund will offer assistance to deserving graduate students.

*Benjamin S. and Ida F. Hornstein Fellowships* (1966) Established by Mr. and Mrs. Benjamin S. Hornstein of New York. The income will provide fellowship assistance for either worthy students who are concentrating in the area of Judaic studies, or to aid in the publication of research studies in the field of Judaic culture and education.

*Institute for Jewish Life Fellowships in Jewish Educational Leadership* (1974) Granted by the Institute for Jewish Life, Wellesley, Massachusetts, for qualified students to attend accredited graduate schools to train for careers in Jewish education.

*International Business Machines Corporation Fellowships in Mathematics* (1970) Granted by the International Business Machines Corporation to offer fellowships to worthy graduate students in the field of Mathematics.

*Max Jacoby Fellowship Endowment in Judaic Studies* (1967) Established by Mrs. Belle Jacoby of New York in memorial tribute to her husband, the income to provide fellowships for graduate students in the field of Judaic Studies.

*Jewish Community Center of Hunts Point, Bronx, New York, Fellowship Endowment* (1962) Established by the Trustees of the Jewish Community Center of Hunts Point, New York, so that the income may be used for gifted and worthy graduate students who are concentrating in the history and literature of traditional Judaism. Preference is given to students who come from the metropolitan New York area.

*Allan R. Johnson Scholarship and Fellowship Fund* (1974) Established by friends and associates to offer scholarship aid to worthy and deserving students.

*Sidney Kahn Fellowship* (1970) Granted by Mr. Sidney Kahn of New York City, to offer fellowship assistance to an outstanding graduate student.

*Robert E. and Harry A. Kangesser Fellowship Trust* (1951) Established by Messrs. Robert E. and Harry A. Kangesser of Cleveland, Ohio, the income to be used for teaching fellowships.

*Henry Kaufmann Fellowship Endowment in Group and Community Development* (1964) Established by the Henry Kaufmann Foundation, Judge Joseph M. Proskauer, Norman S. Goetz, and Samuel Lemberg, all of New York City. The income from this endowed fellowship will support the teaching activities of a faculty member whose doctoral students are specializing in the problems of small groups, neighborhood organizations, and group and community development.

*Kaye, Scholer, Fierman, Hays and Handler Fellowship* (1970) Granted by this law firm of New York City, to offer fellowship aid to an outstanding graduate student.

*Bernard and Miriam Kessner Fellowship Trust Fund in Biology and Chemistry* (1971) Granted by Dr. and Mrs. Bernard Kessner of Bay Harbor, Florida, to provide fellowships to each of ten worthy graduate students annually.

*Klutznick Family Fellowships in Judaic Studies* (1973) Established by Mr. Philip Klutznick of Chicago, Illinois. This fund will offer fellowship assistance to graduate students in the field of Judaic Studies.

*Joseph Kurzon Fellowship* (1969) Established by Mr. Joseph Kurzon of New York City, to offer fellowship aid in an outstanding graduate student.

*William Lakritz Fellowship Endowment in Chemistry* (1962) Established by the daughters of William Lakritz of New York City and their husbands, Mr. and Mrs. Jack N. Friedman of Glencoe, Illinois, and Dr. and Mrs. Henry Graham of Los Angeles, California, to be used in partial subsidy of graduate students who concentrate in the field of chemistry.

*Alexander and Shirley Leaderman President's Scholarship and Fellowship Trust Fund* (1969) Established by Mr. and Mrs. Alexander Leaderman of Baltimore, Maryland. This trust will offer scholarships and fellowships to worthy and deserving students at the discretion of the President of Brandeis University.

*The Charles and Ruth Levy Foundation Scholarship and Fellowship Fund* (1972) To offer scholarship aid to worthy and deserving undergraduate and graduate students.

*Samuel J. Levy Fellowship* (1970) Granted by Mr. Samuel Levy of New York, to offer fellowship assistance to outstanding graduate students.

*Berthan and Isaac Liberman Fellowship* (1971) Granted by Mr. and Mrs. Liberman of New York City to be awarded to an outstanding graduate student enrolled in the Benjamin S. Hornstein Program for Jewish Communal Service.

*Dr. Meno Lissauer Teaching Fellowship in Natural Science* (1957) Set up through a major gift by the late Dr. Meno Lissauer of New York City and the birthday tributes of his colleagues in the Metals and Mining Industry.

*Milton and Corinne Livingston Foundation Fellowship* (1971) Granted by the Milton and Corinne Livingston Foundation of Omaha, Nebraska, to offer fellowship assistance to gifted and needy graduate students.

*Anna R. Lown Memorial Fellowship in Near Eastern and Judaic Studies* (1967) Granted by Dr. and Mrs. Bernard Lown and Mr. and Mrs. Leon H. Fischman to support outstanding graduate students concentrating in Near Eastern and Judaic Studies.

*The Dr. Isador Lubin Scholarship and Fellowship Endowment* (1966) Established by his family and friends for the assistance of either undergraduate or graduate students needing aid to enter or continue their studies at Brandeis.

*Maalot Memorial Fellowships* (1974) Granted through the generosity of the Joseph and Esther Foster Endowment Fund, to cherish the memory of those who have been slain at Maalot, Qiryat Shemona, and elsewhere. This fund will offer aid to Israeli students for study at Brandeis at both the undergraduate and graduate levels.

*Mr. & Mrs. Marvin Lubin Fellowship Fund* (1972) Granted by Mr. and Mrs. Marvin Lubin of New York, to offer fellowship aid to an outstanding and deserving graduate student.

*Carl Marks and Company Fellowship* (1971) Granted by Mr. Robert Boas of New York City, to offer fellowship aid to an outstanding graduate student.

*Theodore Roosevelt McKeldin Fellowship* (1957) Established by friends of former Governor McKeldin as a tribute to him. To be used to subsidize gifted graduate students who plan to concentrate in the areas of political science and government.

*Abraham Mendelowitz Fellowship Endowment Fund* (1959) Established by the Millinery Workers Health and Welfare Fund in honor of Mr. Abraham Mendelowitz of New York City on the occasion of his sixty-fifth birthday. To subsidize outstanding scholars so that they may continue their studies and medical research in biochemistry and microbiology.

*David Merrick Fellowship in Theater Arts* (1970) Granted by Mr. David Merrick of New York, to offer fellowships to graduate students in the Theater Arts.

*Charles E. Merrill Trust Fellowship* (1960) Established by the Charles E. Merrill Trust of Ithaca, New York, to assist graduate students in Judaic Studies.

*The Mr. and Mrs. Robert E. Morris Fellowship Fund* (1972) Established by Mr. and Mrs. Robert E. Morris of New York, to support the graduate program by offering fellowship aid to worthy and deserving students.

*Herman Muehlstein Fellowship Fund* (1966) Established by the Herman Muehlstein Foundation to provide graduate study for a student or students preparing for social welfare careers, preference to be given to students coming from the New York area.

*Paul Muni Scholarship and Fellowship Program in Theater Arts and Film* (1971) Established as a bequest of the late Bella Muni of Hollywood, California, in memory of her husband, the former actor Paul Muni. Scholarships are to be awarded to worthy and deserving undergraduates and fellowships to graduate students in Theater Arts and Film.

*Max I. and Sophie R. Mydans Fellowship Trust Fund* (1972) Established by Mr. and Mrs. Mydans of Brookline, Massachusetts, to grant fellowship aid to outstanding graduate students.

*National Biscuit Company Fellowship* (1962) A grant from the National Biscuit Company of New York City to provide fellowship support for deserving graduate students.

*National Furniture Fellowship in Economics* (1967) Established by leaders in the furniture industry to support graduate study.

*David K. Niles Teaching Fellowship in American Government* (1957) To be assigned in memory of a Trustee of the University, who served with distinction as administrative assistant to President Roosevelt and President Truman, for a worthy graduate student who plans for a career in American government service.

*Lillian Persky Palais Endowment Fellowship* (1960) Established by Mr. and Mrs. Abraham S. Persky of Worcester, Massachusetts, in memory of Mr. Persky's sister, as an endowment whose income in perpetuity is to subsidize the tuition of gifted graduate students so that they may complete their science training.

*Albert and Selma F. Pilavin Fellowship Endowment* (1966) Established by Mrs. Albert Pilavin of Providence, Rhode Island, to be assigned to the Theater Arts Department, preferably to a graduate student interested in playwrighting.

*Polaroid-Teger Fellowship* (1967) Established by the Polaroid Corporation, Cambridge, Massachusetts, in memory of John Teger, former executive at Polaroid and graduate student at the Florence Heller School, to be awarded annually to a student in social gerontology.

*Maurice Pollack Foundation Research Fellowship* (1956) Established by the Maurice Pollack Foundation of Quebec, Canada, to enable gifted graduate students to pursue research programs in the field of Judaic Studies.

*Norman S. Rabb Fellowship* (1967) Established by an act of the Board of Trustees of Brandeis University as a tribute to Mr. Norman Rabb's service as Chairman of the Board of Trustees.

*Sidney H. Rabinowitz Memorial Fellowship Endowment* (1963) Established by the friends of Sidney H. Rabinowitz in order to perpetuate the spirit of his feeling for his fellow man. The income from this fund will be used to provide fellowship assistance for gifted graduate students in the Humanities.

*Minna and Benjamin M. Reeves Fellowship Endowment* (1962) Established by Mr. and Mrs. Benjamin M. Reeves of New York City, the income to support the teaching of an advanced graduate student.

*Bertha C. Reiss Memorial Fellowship Endowment Fund* (1954) Created by the late Dr. Henry Reiss of New York City for the establishment of the Bertha C. Reiss Memorial Fellowship or teaching fellowships. Awards are to be made to students on the basis of their accomplishments in the field of research and/or teaching.

*Harry and Mildred Remis Fellowship and Scholarship Fund in the Creative Arts* (1973) Established by Mr. and Mrs. Harry Remis of Boston, Massachusetts. The income from this fund will offer scholarship and fellowship assistance to students in the Creative Arts.

*Charles Revson Fellowship Trust* (1962) A capital fund established by Charles Revson of New York City, to be assigned to outstanding students who wish to pursue their graduate studies in the areas of biochemistry, chemistry, physics, biophysics, mathematics or psychology.

*Meshulam and Judith Riklis Fellowships* (1970) Granted by Mr. and Mrs. Meshulam Riklis of New York City, to offer fellowship stipends to outstanding and worthy scholars at the Graduate School of Arts and Sciences.

*Benjamin Rosenberg Teaching Fellowship Endowment* (1959) Established as a memorial tribute by Mr. and Mrs. Joseph Rosenberg of Fox Point, Wisconsin, to support a teaching fellowship in the field of Polymer Chemistry.

*Leo L. Rosenhirsch Memorial Fellowship Fund* (1961) Established by Mr. Alfred E. Rosenhirsch and Mrs. Hilda Nussenfeld of New York City to help cover tuition and other expenditures for gifted and needy graduate students.

*The Abram L. Sachar International Fellowship Program* (1969) This program was set up by the Trustees in tribute to the first President of the University. It is a highly selective program that sends Brandeis graduate and undergraduate students to outstanding foreign universities for a period of study to supplement the training that they have had at Brandeis.

*Israel Sachs Teaching Fellowship in Social Relations* (1952) Established by his wife and children in his memory.

*Dr. Harry Sagansky Fellowship Trust* (1963) Established by Dr. Harry Sagansky of Brookline, Massachusetts, to be used for subsidies to graduate students so that they may be helped in the completion of their specialized training.

*Rose and Ira Saks Fellowships* (1967) Granted through a bequest from the Estate of Ira Saks of Cleveland, Ohio, to offer fellowship assistance to outstanding graduate students.

*Samuel and Rae Salny Fellowship Endowment in Social Relations* (1952) Established by Mrs. Samuel M. Salny and the late Mr. Salny of Boston, Massachusetts, to support a fellowship in the field of social relations.

*Shirley and Maurice Saltzman Fellowship Endowment Fund* (1961) Established by Mr. and Mrs. Maurice Saltzman of Cleveland, Ohio, so that the income may be assigned to gifted and advanced students who are concentrating in the humanities.

*Honorable Howard J. Samuels Fellowship* (1968) Granted by the Honorable Howard J. Samuels, former Undersecretary of Commerce, to offer fellowship assistance to worthy graduate students.

*Edward A. Schaffer Teaching Fellowship Endowment* (1959) Established by his wife in memorial tribute, to support a teaching fellowship in the field of humanistic and social sciences.

*Alice Boughton Schaffner Memorial Fellowship Endowment* (1961) Established under the terms of the will of the late Alice Boughton Schaffner by her designators, Winifred Raushenbush and James Rorty. The income from this fund will be used to provide fellowship support for outstanding women students from racially underprivileged families.

*Rabbi Solomon Scheinfeld Fellowship Endowment* (1959) Established by the Sylvia and Aaron Scheinfeld Foundation of Chicago, Illinois, as a memorial tribute to Mr. Scheinfeld's distinguished father. The income is to be used for fellowship assistance to gifted graduate students, preferably from Wisconsin, in the School for Advanced Studies in Social Welfare.

*Mr. and Mrs. S. H. Scheuer Fellowship Fund* (1973) Granted by Mr. and Mrs. Scheuer of New York City, to offer fellowship assistance to deserving students in the Graduate School.

*The Hemmie and Joe Schoen Fellowship Fund* (1974) Granted by family and friends of Mr. and Mrs. Joe Schoen of New York City, in honor of their fiftieth wedding anniversary. This fund will offer fellowship aid to worthy and needy graduate students in the field of Politics.

*Samuel Schulman Graduate Teaching Fellowships* (1974) Granted by Mr. Samuel Schulman of Los Angeles, California, to offer fellowships to highly qualified graduate students without limit as to discipline or department.

*Joseph Schumer Fellowship Endowment Fund* (1966) Established by a bequest in the will of Joseph Schumer, late of New York City, the income of which will provide Joseph Schumer Fellowships for needy and gifted students in music.

*Joseph E. Seagram and Sons, Inc. Fellowship Fund* (1971) Granted by Joseph E. Seagram and Sons, Inc. of New York, to offer fellowship aid to a worthy and deserving student at the Graduate School of Arts and Sciences.

*Helen Segal Memorial Fellowship* (1970) Established in loving memory by her family and friends, to offer fellowship aid to an outstanding graduate student in Near Eastern and Judaic Studies.

*Fannie and Simon Shamroth Fellowship Endowment* (1963) Established by the children of Fannie and Simon Shamroth of Lynn, Massachusetts. The income from this fund will be used to help subsidize deserving graduate students.

*Isaiah Leo Sharfman Teaching Fellowship Endowment* (1956) Established by Mr. and Mrs. Samuel R. Rosenthal of Highland Park, Illinois, in tribute to Professor Sharfman of the University of Michigan, with preference given to teaching fellows in the area of Economics.

*Charles S. Shaughnessy Endowed Fellowship* (1970) Established by devoted friends and associates in the furniture industry as a tribute to a deeply respected colleague.

*Bernard Shivek Memorial Fellowship Endowment* (1967) Established in loving memory by the Shivek Family of Chestnut Hill, Massachusetts, the income to offer fellowship assistance to graduate students.

*The Shubert Fellowship in Playwrighting* (1970) Granted by the Sam S. Shubert Foundation of New York City. To sponsor a graduate student playwright enrolled in the Theater Arts Department who will actively work on a full length drama under the supervision of the Department.

*Sylvia and Max L. Shulman Fellowship* (1971) Established by Major Shulman of New York City, to offer a fellowship to an outstanding graduate student in the Harold and Minnie Fierman School of Chemistry.

*Theodore H. and Silvia Silbert Internships in the Hornstein Program* (1972) Granted by Mr. and Mrs. Theodore H. Silbert of New York City, to fund second-year internships for graduate students in the Benjamin Hornstein Program for Jewish Communal Service.

*Charles E. Smith Family Fellowships* (1969) Established by Mr. Charles E. Smith of Washington, D.C., the income of which will be granted to outstanding and needy graduate students.

*Charles E. Smith Family Foundation Fellowships* (1973) Established through the Charles E. Smith Family Foundation of Washington, D. C., to offer teaching fellowships in the mathematical sciences.

*Jack and Irene Hayes Solomon Foundation Fellowship Endowment* (1962) Established by the Jack and Irene Hayes Solomon Foundation of New York City, the income to be used to support fellowships for gifted graduate students.

*Mr. and Mrs. Harry Stadler Teaching Fellowship in Music* (1956) Established by Mr. and Mrs. Harry Stadler of Hollywood, Florida, in memory of their loving mothers, Sarah Stadler and Etta Berger, to support a teaching fellowship in the field of music.

*Joseph F. Stein Foundation, Inc. Fellowship* (1959) Established by the Joseph F. Stein Foundation, Inc. through Mr. Joseph F. Stein of New York City, for fellowship study in the Florence Heller Graduate School for Advanced Studies in Social Welfare.

*The Isidore Stern Foundation Fellowship* (1972) Granted by Mr. H. James Stern and Mr. James A. Stern of New York City, to offer fellowship aid to an outstanding and deserving graduate student.

*Sunshine Biscuits, Incorporated, Fellowship* (1962) Established through a grant from Sunshine Biscuits, Incorporated, of Long Island City, New York, to provide fellowship assistance for deserving graduate students.

*Gertrude W. and Edward M. Swartz Fellowship Endowment Fund* (1954) Established by Mr. and Mrs. Edward M. Swartz of Brookline, Massachusetts, to support a teaching or research fellowship.

*Melvin M. Swig Scholarship and Fellowship Fund* (1974) Granted by friends and associates of Mr. Melvin M. Swig of San Francisco, California, in honor of his induction as a Trustee of Brandeis University.

*David Tannenbaum Teaching Fellowship in Legal Institutions* (1958) An endowment to honor the memory of David Tannenbaum of Beverly Hills, California, established by his friends and admirers.

*Thanks to Scandinavia Fellowship* (1969) A grant sponsored by Thanks to Scandinavia, Inc., a nonprofit scholarship foundation dedicated to commemorating the valiant deeds of the Scandinavian people in rescuing persons of the Jewish faith during the Hitler tyranny of World War II. A stipend will be awarded annually to a student from one of the following countries: Denmark, Sweden, Norway or Finland.

*Michael Tuch Fellowship in Hebrew Ethics and Literature* (1950) Granted by the Michael Tuch Foundation of New York City, to provide fellowship support for graduate students in the fields of Hebrew Ethics and Literature.

*Edyth Usen Fellowship Endowment* (1967) Established by Mr. and Mrs. Irving Usen of Newton, Massachusetts. The income will be assigned as a fellowship to a gifted and needy graduate student.

*Rose Mary Waga Fellowship Endowment* (1964) Established by Mr. Peter E. Klein of Cleveland, Ohio, as Trustee to provide, in perpetuity, assistance to talented and needy students in the Graduate School.

*Leo Wasserman Graduate Fellowship* (1962) Established through a gift from the Leo Wasserman Foundation as a memorial to Leo Wasserman, late of Brookline, Massachusetts, the income to be devoted to the aid of students who will pursue their graduate studies at the University's Department of Near Eastern and Judaic Studies.

*Ethel B. and Sidney M. Weinstein Fund for Training in Jewish Education* (1972) Granted by Sidney M. Weinstein of New Jersey, chairman of the Board of Overseers of the Philip W. Lown Center for Contemporary Jewish Studies for training in Jewish education.

*Samuel Wexler Scholarship and Fellowship Fund* (1972) Established by friends and associates of Samuel Wexler in honor of his seventieth birthday. To offer scholarship and fellowship aid to worthy students.

*Wien International Scholarship and Fellowship Program* (1958) This program, created by the Lawrence A. and Mae Wien Fund, is designed to further international understanding, to provide foreign students with opportunities for study in the United States, and to enrich the intellectual and cultural life of the Brandeis campus.



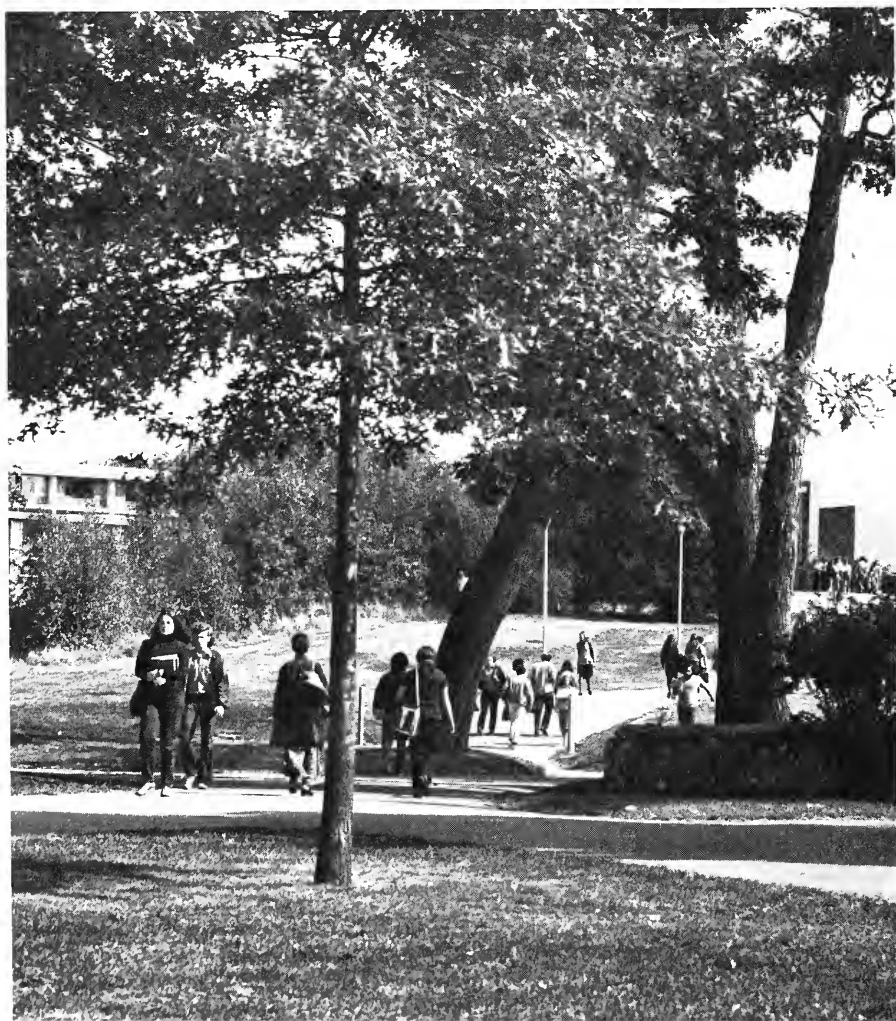
*Carrie Wiener Teaching Fellowship (1950)* The income from this fund is to be used for a fellowship, established by Mr. Herman Wiener of Toledo, Ohio, in the name of his wife.

*Leon G. Winkelman Fellowship Endowment Fund (1959)* Established by the Leon G. and Josephine Winkelman Foundation of Detroit, Michigan, as a memorial tribute to Leon G. Winkelman, to subsidize a graduate fellowship in the field of gerontology.

*The Leila G. Winton Music Composition Fellowship (1969)* Established by Mr. Harold M. Winton of New York City, to be awarded to a graduating student, outstanding in the field of music composition, who plans to continue the study of music composition at the graduate level.

*Woodbourne Company Fellowship (1970)* Granted to the University to offer fellowship aid to an outstanding graduate student.

*Zale-Lipshy Endowed Scholarship and Fellowship Fund (1974)* Established in honor of three prominent Dallas, Texas, business men: Morris B. Zale, William Zale and Ben A. Lipshy, to offer scholarships to undergraduates and fellowships to graduate students, awarded without discrimination and solely as to merit and need.



# Officers Of Instruction

## Faculty of Arts and Sciences

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Ph.D., Princeton University	
Jack S. Goldstein	<i>Dean of Faculty and Professor of Astrophysics</i>
Ph.D., Cornell University	
Helen Codere	<i>Dean of the Graduate School, Associate Dean of Faculty</i>
Ph.D., Columbia University	<i>and Professor of Anthropology</i>
Robert Evans, Jr.	<i>Dean of the College, Associate Dean of Faculty</i>
Ph.D., University of Chicago	<i>and Atran Professor of Economics</i>
Timothy C. Aarset	<i>Performing Artist-in-Residence (Music)</i>
D.M.A., Stanford University	
Robert H. Abeles	<i>Professor of Biochemistry</i>
Ph.D., University of Chicago	
Henry D. Aiken	<i>Charles Goldman Professor of Philosophy and</i>
Ph.D., Harvard University	<i>History of Ideas</i>
Alexander Altmann	<i>Philip W. Lown Professor of Jewish Philosophy</i>
Ph.D., University of Berlin	<i>and History of Ideas</i>
Lawrence E. Arend, Jr.	<i>Assistant Professor of Psychology</i>
Ph.D., Duke University	
Alan Arian	<i>Visiting Professor of Politics and Contemporary</i>
Ph.D., Michigan State University	<i>Jewish Studies</i>
	<i>(Tel-Aviv University)</i>
***Robert J. Art	<i>Associate Professor of Politics</i>
Ph.D., Harvard University	
Maurice Auslander	<i>Sol Kittay Professor of Mathematics</i>
Ph.D., Columbia University	
Geoffrey Barraclough	<i>Professor of History</i>
M.A., Oriel College, Oxford, England	
Howard Bay	<i>Alan King Professor of Theater Arts</i>
Carl I. Belz	<i>Lecturer in Fine Arts and Director, Rose Art Museum</i>
Ph.D., Princeton University	
James R. Bensinger	<i>Assistant Professor of Physics</i>
Ph.D., University of Wisconsin	
Margaret H. Bent	<i>Jacob Ziskind Visiting Professor of Music</i>
Ph.D., Cambridge University	
	<i>(Goldsmiths' College, University of London)</i>
Carlos A. Berenstein	<i>Visiting Associate Professor of Mathematics</i>
Ph.D., Courant Institute, New York University	
	<i>(University of Maryland)</i>
*Arthur Berger	<i>Irving Fine Professor of Music</i>
M.A., Harvard University	
Robert W. Berger	<i>Associate Professor of Fine Arts</i>
Ph.D., Harvard University	
Bradley M. Berke	<i>Assistant Professor of French and Comparative Literature</i>
Ph.D., New York University	
Stephan Berko	<i>Robert S. Boas Professor of Physics</i>
Ph.D., University of Virginia	
David Sandler Berkowitz	<i>Professor of History</i>
Ph.D., Harvard University	

\* On leave, 1975-76.

\*\*\* On leave, Spring Term, 1975-76.

Joseph S. Berliner	<i>Rosen Family Professor of Economics</i>
Ph.D., Harvard University	
Gerald S. Bernstein	<i>Associate Professor of Fine Arts</i>
Ph.D., University of Pennsylvania	
Rudolph Binion	<i>Leff Families Professor of Modern European History</i>
Ph.D., Columbia University	
Egon Bittner	<i>Harry Coplan Professor in the Social Sciences</i>
Ph.D., University of California, Los Angeles	
Eugene C. Black	<i>Ottillie Springer Professor of History</i>
Ph.D., Harvard University	
Jerome P. Boime	<i>Assistant Professor of Sociology</i>
M.A., University of Chicago	
Jean-Francois Boittin	<i>Instructor in French</i>
Agrégation de Lettres, Sorbonne	
**Ludovico Borgo	<i>Associate Professor of Fine Arts</i>
Ph.D., Harvard University	
<i>(On the Robert B. Mayer Memorial Foundation)</i>	
David John Boros	<i>Lecturer in Music</i>
M.F.A., Brandeis University	
Martin Boykan	<i>Associate Professor of Music</i>
M.M., Yale School of Music	
Paul H. Brainard	<i>Professor of Music</i>
Ph.D., University of Gottingen	
*Naftali C. Brandwein	<i>Rose B. and Joseph H. Cohen Professor of Modern Hebrew Literature</i>
D.R.E., Jewish Theological Seminary	
Robert Brannum	<i>Assistant Professor of Physical Education</i>
B.S., Michigan State University	
Leo Bronstein	<i>Professor Emeritus of Fine Arts</i>
Ph.D., University of Paris, Sorbonne	
Edgar H. Brown, Jr.	<i>Jennie Sapirstein Professor of Mathematics</i>
Ph.D., Massachusetts Institute of Technology	
Paul L. Brown	<i>Artist-in-Residence, Department of Fine Arts</i>
M.F.A., Yale School of Art and Architecture	
David A. Buchsbaum	<i>Professor of Mathematics</i>
Ph.D., Columbia University	
Richard M. Burian	<i>Lecturer in Philosophy</i>
Ph.D., University of Pittsburgh	
Patton Campbell	<i>Visiting Lecturer in Theater Arts</i>
M.F.A., Yale Drama School	
Karl F. Canter	<i>Assistant Professor of Physics</i>
Ph.D., Wayne State University	
*James A. Carlson	<i>Assistant Professor and Research Associate in Mathematics</i>
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Lemuel Carroll	<i>Instructor in African and Afro-American Studies</i>
B.Sc. Arkansas State College	
Anne P. Carter	<i>Fred P. Pomerantz Professor of Economics</i>
Ph.D., Harvard University	
Donald L. D. Caspar	<i>Professor of Physics and Rosenstiel Basic Medical Sciences Research Center</i>
Ph.D., Yale University	
Iu-Yam Chan	<i>Assistant Professor of Chemistry</i>
Ph.D., University of Chicago	
Max Chrétien	<i>Associate Professor of Physics</i>
Ph.D., University of Basel	

\* On leave, 1975-76.

\*\* On leave, Fall Term, 1975-76.

- Donald J. Ciappenelli  
Ph.D., Brandeis University  
*Lecturer in Chemistry*
- James H. Clay  
Ph.D., University of Illinois  
*Associate Professor of Theater Arts*
- William J. Cloonan  
Ph.D., University of North Carolina  
*Assistant Professor of French and Comparative Literature*
- Carolyn Cohen  
Ph.D., Massachusetts Institute of Technology  
*Professor of Biology and Rosenstiel Basic Medical Sciences Research Center*
- Edward Cohen  
M.A., University of California, Berkeley  
*Assistant Professor of Music*
- Esther D. Cohen  
M.A., Brown University  
*Lecturer in History*
- Jacob Cohen  
M.A., Yale University  
*Assistant Professor of American Studies*
- Jacques Cohen  
Ph.D., University of Illinois  
*Associate Professor of Physics*
- Saul G. Cohen  
Ph.D., Harvard University  
*University Professor, Charles A. Breskin Professor of Chemistry*
- Andrée M. Collard  
Ph.D., Harvard University  
*Associate Professor of Spanish*
- George L. Cowgill  
Ph.D., Harvard University  
*Associate Professor of Anthropology*
- Thomas E. Cronin  
Ph.D., Stanford University  
*Visiting Associate Professor of Politics*
- \*\*\*J. V. Cunningham  
Ph.D., Stanford University  
*Paul E. Prosswimmer Professor of English and Humanities*
- Margaret Dalton  
Ph.D., Harvard University  
*Associate Professor of Russian*
- John Putnam Demos  
M.A., University of California, Berkeley  
*Professor of History*
- Charles Derber  
Ph.D., University of Chicago  
*Assistant Professor of Sociology*
- David J. DeRosier  
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- \*Stanley Deser  
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- Peter Diamandopoulos  
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*Professor of Philosophy and History of Ideas*
- Muriel Rita Dolan  
M.F.A., Catholic University of America  
*Assistant Professor of Theater Arts*
- \*F. Trenery Dolbear, Jr.  
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*Associate Professor of Economics*  
(On the Clinton S. Darling Foundation)
- Paul B. Dorain  
Ph.D., Indiana University  
*Professor of Chemistry*
- Emily P. Dudek  
Ph.D., Radcliffe College  
*Adjunct Assistant Professor of Chemistry*
- James E. Duffy  
Ph.D., Harvard University  
*Professor of Romance Literature and History*
- Arthur Edelstein  
A.M., Stanford University  
*Lecturer with the rank of Assistant Professor of English*
- \*David Eisenbud  
Ph.D., University of Chicago  
*Assistant Professor of Mathematics*

\* On leave, 1975-76.

\*\*\* On leave, Spring Term, 1975-76.

- \*John T. Elliff *Associate Professor of Politics*  
Ph.D., Harvard University
- \*Edward Engelberg *Professor of Comparative Literature*  
Ph.D., University of Wisconsin
- Herman T. Epstein *Professor of Biophysics*  
Ph.D., University of Michigan
- Irving R. Epstein *Associate Professor of Chemistry*  
Ph.D., Harvard University
- Gerald D. Fasman *Louis I. and Bessie Rosenfield Professor of Biochemistry*  
Ph.D., California Institute of Technology
- \*Leonard J. Fein *Klutznick Family Professor of Contemporary Jewish Studies*  
Ph.D., Michigan State University
- Gordon A. Fellman *Associate Professor of Sociology*  
Ph.D., Harvard University
- \*\*\*David Hackett Fischer *Earl Warren Professor of History*  
Ph.D., The Johns Hopkins University
- Michael Fishbane *Associate Professor of Hebrew and Biblical Studies*  
Ph.D., Brandeis University  
(*On the Samuel Lane Foundation*)
- Charles S. Fisher *Associate Professor of Sociology*  
Ph.D., University of California, Berkeley
- Philip Fisher *Assistant Professor of English*  
Ph.D., Harvard University
- Susan Forbes *Assistant Professor of American Studies*  
Ph.D., University of Pennsylvania
- Marvin Fox *Nathan and Janet Appleman Professor of Judaic Studies*  
Ph.D., University of Chicago
- Bruce M. Foxman *Assistant Professor of Chemistry*  
Ph.D., Massachusetts Institute of Technology
- Gregory L. Freeze *Assistant Professor of History*  
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- David M. Freifelder *Professor of Biochemistry*  
Ph.D., University of Chicago
- Eberhard Frey *Associate Professor of German*  
Ph.D., Cornell University
- Yehuda Friedlander *Visiting Professor of Hebrew Literature*  
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(*Bar-Ilan University*)
- Lawrence H. Fuchs *Meyer and Walter Jaffe Professor of American Civilization and Politics*  
Ph.D., Harvard University
- Chandler M. Fulton *Associate Professor of Biology*  
Ph.D., Rockefeller Institute
- \*\*\*Joachim E. Gaehde *Sidney and Ellen Wien Professor in the History of Art*  
Ph.D., New York University
- \*\*\*Stephen J. Gendzier *Associate Professor of French*  
Ph.D., Columbia University
- Roger Z. George *Instructor in Politics*  
M.A., Fletcher School, Tufts University
- John Gibbons *Performing Artist-in-Residence (Music)*  
B.Mus., New England Conservatory
- Martin Gibbs *Professor of Biology*  
Ph.D., University of Illinois

\* On leave, 1975-76.

\*\*\* On leave, Spring Term, 1975-76.

Patricia J. Gibson	<i>Instructor in African and Afro-American Studies</i>
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Ph.D., Harvard University	
Nahum Norbert Glatzer	<i>Professor Emeritus of Jewish History and Social Ethics</i>
Ph.D., University of Frankfurt	
Ariella D. Goldberg	<i>Assistant Professor of Hebrew</i>
Ph.D., Brandeis University	
Susan Goldberg	<i>Assistant Professor of Psychology</i>
M.S., Tufts University	
Sidney Golden	<i>Henry F. Fischbach Professor of Chemistry</i>
Ph.D., Harvard University	
Maynard Goldman	<i>Performing Artist-in-Residence (Music)</i>
B.Mus., Boston University	
William M. Goldsmith	<i>Assistant Professor of American Studies</i>
Ph.D., Columbia University	
Fred Goldstein	<i>Performing Artist-in-Residence (Music)</i>
B.A., Queens College	
Cyrus H. Gordon	<i>Professor Emeritus of Mediterranean Studies</i>
Ph.D., University of Pennsylvania	
William S. Gornall	<i>Assistant Professor of Physics</i>
Ph.D., University of Toronto	
*James R. Green	<i>Assistant Professor of History</i>
Ph.D., Yale University	
Ralph Greenberg	<i>Assistant Professor of Mathematics</i>
Ph.D., Princeton University	
Robert S. Greenberg	<i>Associate Professor of Philosophy</i>
Ph.D., University of Chicago	
Peter Grippe	<i>Lester and Joan Avnet Professor of Sculpture</i>
Marcus T. Grisaru	<i>Professor of Physics</i>
Ph.D., Princeton University	
Eugene P. Gross	<i>Sol Kittay Professor of Physics</i>
Ph.D., Princeton University	
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Ph.D., Brandeis University	
***Roy F. Grow	<i>Assistant Professor of Politics</i>
Ph.D., University of Michigan	
Ernest Grunwald	<i>Professor of Chemistry</i>
Ph.D., University of California, Los Angeles	
Mildred Guberman	<i>Lecturer in Contemporary Jewish Studies</i>
M.S.W., Columbia University	
Ignacio Guerrero	<i>Visiting Assistant Professor of Mathematics</i>
State University of New York, Stony Brook	
Edythe C. Haber	<i>Visiting Assistant Professor of Russian</i>
Ph.D., Harvard University	
James E. Haber	<i>Assistant Professor of Biology and Rosenstiel</i>
Ph.D., University of California, Berkeley	<i>Basic Medical Sciences Research Center</i>
Jeffrey C. Hall	<i>Assistant Professor of Biology</i>
Ph.D., University of Washington	
Shirley L. Hall	<i>Lecturer in African and Afro-American Studies</i>
M.A., Boston University	
***Benjamin Halpern	<i>Richard Koret Professor of Near Eastern Studies</i>
Ph.D., Harvard University	

\* On leave, 1975-76.

\*\* On leave, Fall Term, 1975-76.

\*\*\* On leave, Spring Term, 1975-76.

Martin Halpern	Associate Professor of Theater Arts
Ph.D., Harvard University	
Harlyn O. Halvorson	Professor of Biology and Director, Rosenstiel
Ph.D., University of Illinois	Basic Medical Sciences Research Center
Eugenia Hanfmann	Professor Emerita of Psychology
Ph.D., University of Jena	
David A. Hanson	Assistant Professor of Russian
Ph.D., Harvard University	
Victor Harris	Edytha Macy Gross Professor of Humanities
Ph.D., University of Chicago	
Erica Harth	Associate Professor of French and Comparative Literature
Ph.D., Columbia University	
Gila J. Hayim	Assistant Professor of Sociology
Ph.D., University of Pennsylvania	
Peter Heller	Professor of Physics
Ph.D., Harvard University	
Michael J. Henchman	Associate Professor of Chemistry
Ph.D., Yale University	
*James B. Hendrickson	Professor of Chemistry
Ph.D., Harvard University	
*Maureen Heneghan	Associate Professor of Costume Design
Maurice Hershenson	Associate Professor of Psychology
Ph.D., Yale University	
(On the George and Frances Levin Foundation)	
William E. Higgins	Assistant Professor of Classics
Ph.D., Harvard University	
*Donald Hindley	Professor of Politics
Ph.D., Australian National University	
Milton Hindus	Professor of English
M.S., City College of New York	
*Thomas C. Hollocher, Jr.	Associate Professor of Biochemistry
Ph.D., University of Rochester	
Jen-Shiang Hong	Assistant Professor of Biochemistry
Ph.D., University of California, Berkeley	
David M. Hoose	Performing Artist-in-Residence (Music)
B.M., Oberlin Conservatory of Music	
*Benjamin B. Hoover	Professor of English
Ph.D., University of California, Berkeley	
Israel Horovitz	Fannie Hurst Visiting Professor of Theater Arts
David A. Horr	Assistant Professor of Anthropology
Ph.D., Harvard University	
Judith A. Houde	Instructor in Physical Education
M.S.Ed., University of Tennessee	
Everett C. Hughes	Professor Emeritus of Sociology
Ph.D., University of Chicago	
Mark L. Hulliung	Assistant Professor of Politics
Ph.D., Harvard University	
*Robert C. Hunt	Associate Professor of Anthropology
Ph.D., Northwestern University	
Sidney Hurwitz	Visiting Artist-in-Residence, Fine Arts
M.F.A., Boston University	
(Boston University)	

\*On leave, 1975-76.

Kiyoshi Igusa	<i>Assistant Professor of Mathematics</i>
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David J. Ingle	<i>Lecturer in Psychology</i>
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***Judith T. Irvine	<i>Assistant Professor of Anthropology</i>
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Ray S. Jackendoff	<i>Associate Professor of Linguistics</i>
Ph.D., Massachusetts Institute of Technology	
David Jacobson	<i>Associate Professor of Anthropology</i>
Ph.D., University of Rochester	
Clinton M. Jean	<i>Lecturer in Sociology</i>
M.A., Columbia University	
William P. Jencks	<i>Professor of Biochemistry</i>
M.D., Harvard University	
Leon A. Jick	<i>Associate Professor of American Jewish Studies</i>
Ph.D., Columbia University	
(On the Helen and Irving Schneider Foundation)	
William A. Johnson	<i>Albert V. Danielsen Professor of Christian Thought</i>
Ph.D., Columbia University	
Patricia A. Johnston	<i>Assistant Professor of Classics</i>
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Lisel K. Judge	<i>Associate Professor of Physical Education</i>
M.Ed., Northeastern University	
*Rosabeth Moss Kanter	<i>Associate Professor of Sociology</i>
Ph.D., University of Michigan	
*David Kaplan	<i>Professor of Anthropology</i>
Ph.D., University of Michigan	
Theodore L. Kazanoff	<i>Professor of Theater Arts</i>
M.A., Smith College	
Philip M. Keehn	<i>Assistant Professor of Chemistry</i>
Ph.D., Yale University	
Allan R. Keiler	<i>Lecturer with the rank of Assistant Professor of Music</i>
Ph.D. (Linguistics), Harvard University	
Morton Keller	<i>Samuel J. and Augusta Spector Professor of History</i>
Ph.D., Harvard University	
George A. Kelly	<i>Professor of Politics</i>
Ph.D., Harvard University	
Albert Kelner	<i>Abraham S. and Gertrude Burg Professor of Microbiology</i>
Ph.D., University of Pennsylvania	
Paul O. Kirley	<i>Visiting Assistant Professor of Mathematics</i>
Ph.D., Northwestern University	
**Lawrence E. Kirsch	<i>Associate Professor of Physics and Director of</i>
Ph.D., Rutgers University	<i>Feldberg Computer Center</i>
***Attila O. Klein	<i>Associate Professor of Biology</i>
Ph.D., Indiana University	
Karen Wilk Klein	<i>Associate Professor of English</i>
Ph.D., Columbia University	

\* On leave, 1975-76.

\*\* On leave, Fall Term, 1975-76.

\*\*\* On leave, Spring Term, 1975-76.



- \*\*Raymond Knight *Assistant Professor of Psychology*  
Ph.D., University of Minnesota
- \*Robert Lincoln Koff *Professor of Music and Artist-in-Residence*  
B.Mus., Oberlin College
- Maxine Kumin *Fannie Hurst Visiting Professor of English and American Literature*  
A.M., Radcliffe College
- Kenneth Kustin *Professor of Chemistry*  
Ph.D., University of Minnesota
- Igal Kwart *Lecturer in Philosophy*  
M.A., University of Pittsburgh
- James R. Lackner *Associate Professor of Psychology*  
Ph.D., Massachusetts Institute of Technology
- Robert V. Lange *Associate Professor of Physics*  
Ph.D., Harvard University
- Richard H. Lansing *Assistant Professor of Italian and Comparative Literature*  
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- Robert J. Larner *Assistant Professor of Economics*  
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- \*Louis Lefebvre *Fred C. Hecht Professor of International Economics*  
Ph.D., Massachusetts Institute of Technology
- Eugene Lehner *Performing Artist-in-Residence (Music)*
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- Max Lerner *Professor Emeritus of American Civilization and Institutions*  
Ph.D., Robert Brookings Graduate School
- Martin A. Levin *Associate Professor of Politics*  
Ph.D., Harvard University
- Harold I. Levine *Professor of Mathematics*  
Ph.D., University of Chicago
- Jerome P. Levine *Professor of Mathematics*  
Ph.D., Princeton University
- Lawrence Levine *Professor of Biochemistry*  
Sc.D., The Johns Hopkins University  
(*American Cancer Society Professorship*)
- Norman E. Levine *Associate Professor of Physical Education*  
B.S., Bates College
- Alan L. Levitan *Associate Professor of English*  
Ph.D., Princeton University
- Denah L. Lida *Professor of Spanish*  
Ph.D., University of Mexico
- \*David I. Lieberman *Professor of Mathematics*  
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- Henry Linschitz *Helena Rubinstein Professor of Chemistry*  
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- Edgar Lipworth *Professor of Physics*  
Ph.D., Columbia University
- John E. Lisman *Assistant Professor of Biology*  
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- Elaine P. Loeffler *Associate Professor of Fine Arts*  
B.A., Smith College
- John M. Lowenstein *Helena Rubinstein Professor of Biochemistry*  
Ph.D., London University

\* On leave, 1975-76.

\*\* On leave, Fall Term, 1975-76.

\*\*\* On leave, Spring Term, 1975-76.

Susan Lowey	<i>Professor of Biochemistry and Rosenstiel Basic Medical Sciences Research Center</i>
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Roy C. Macridis	<i>Lawrence A. Wien Professor of International Cooperation</i>
Ph.D., Harvard University	
Robert J. Maeda	<i>Assistant Professor of Fine Arts</i>
Ph.D., Harvard University	
***Joan M. Maling	<i>Assistant Professor of Linguistics</i>
Ph.D., Massachusetts Institute of Technology	
Robert A. Manners	<i>Ralph Levitz Professor of Social Anthropology</i>
Ph.D., Columbia University	
Daniel J. Margolis	<i>Lecturer in Jewish Education</i>
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Teruhisa Matsusaka	<i>Irving Schneider Professor of Mathematics</i>
D.Sc., Kyoto University	
John F. Matthews	<i>Max Richter Professor of American Civilization and Institutions</i>
A.B., University of Cincinnati	
Alan L. Mayer	<i>Professor of Mathematics</i>
Ph.D., Princeton University	
**Michael B. Mazur	<i>Artist-in-Residence, Department of Fine Arts</i>
M.F.A., Yale University	
Leslie Ann McArthur	<i>Assistant Professor of Psychology</i>
Ph.D., Yale University	
Barry McCormick	<i>Instructor in Economics</i>
M.A., Manchester University, England	
Glenn M. McNatt	<i>Instructor in African and Afro-American Studies</i>
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Marvin Meyers	<i>Harry S. Truman Professor of American Civilization</i>
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*Allen P. Mills	<i>Associate Professor of Physics</i>
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Paul H. Monsky	<i>Professor of Mathematics</i>
Ph.D., University of Chicago	
Robert O. Moody, Jr.	<i>Assistant Professor of Theater Arts</i>
Charles W. Moore	<i>Associate Professor of Theater Arts</i>
M.F.A., Yale University	
Ricardo B. Morant	<i>Minnie and Harold L. Fierman Professor of Psychology</i>
Ph.D., Clark University	
Ruth Schachter Morgenthau	<i>Adlai E. Stevenson Professor of International Politics</i>
Ph.D., Oxford University, England	
Martha A. Morrison	<i>Instructor in Mediterranean Studies</i>
Ph.D., Brandeis University	
Leonard C. Muellner	<i>Assistant Professor of Classics</i>
Ph.D., Harvard University	
William T. Murakami	<i>Associate Professor of Biochemistry</i>
Ph.D., University of Southern California	
Marcos G. Namashulua	<i>Instructor in African and Afro-American Studies</i>
M.A., Fordham University	
Peter B. Natchez	<i>Assistant Professor of Politics</i>
Ph.D., Harvard University	
Marion Nestle	<i>Assistant Professor of Biology</i>
Ph.D., University of California, Berkeley	
Gordon D. Newby	<i>Lecturer in Mediterranean Studies</i>
Ph.D., Brandeis University	

\* On leave, 1975-76.

\*\* On leave, Fall Term, 1975-76.

\*\*\* On leave, Spring Term, 1975-76.

John D. Niles	<i>Assistant Professor of English</i>
Ph.D., University of California, Berkeley	
Alfred Nisonoff	<i>Professor of Biology and Rosenstiel Basic Medical</i>
Ph.D., The Johns Hopkins University	<i>Sciences Research Center</i>
Edward C. Nowacki	<i>Performing Artist-in-Residence (Music)</i>
B.A., University of Toronto	
Isaac Neustadt-Noy	<i>Lecturer in Jewish History</i>
B.A., Hebrew University, Jerusalem	
Thomas P. O'Connell	<i>Lecturer in Physical Education</i>
M.Ed., Suffolk University	
James D. Olesen	<i>Assistant Professor of Music</i>
B.A., University of Chicago	
Gjerding Olsen	<i>Associate Professor of Biology</i>
Ph.D., Harvard University	
Richard J. Onorato	<i>Associate Professor of English</i>
Ph.D., Harvard University	
Bruce I. Oppenheimer	<i>Assistant Professor of Politics</i>
Ph.D., University of Wisconsin	
Richard S. Palais	<i>Professor of Mathematics</i>
Ph.D., Harvard University	
Ronald J. Parry	<i>Assistant Professor of Chemistry</i>
Ph.D., Brandeis University	
***Hugh N. Pendleton III	<i>Associate Professor of Physics</i>
Ph.D., Carnegie Institute of Technology	
Peter A. Petri	<i>Assistant Professor of Economics</i>
A.B., Harvard University	
Arnold K. Pizer	<i>Assistant Professor and Research Associate in Mathematics</i>
Ph.D., Yale University	
Mordeca Jane Pollock	<i>Assistant Professor of French</i>
Ph.D., Harvard University	
Robert O. Preyer	<i>Professor of English</i>
Ph.D., Columbia University	
Benjamin C. I. Ravid	<i>Assistant Professor of Jewish History</i>
Ph.D., Harvard University	
Esther E. Rawidowicz	<i>Assistant Professor Emerita of German</i>
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Bernard Reisman	<i>Assistant Professor of American Jewish Communal</i>
Ph.D., Brandeis University	<i>Studies and Director, Hornstein Program</i>
Joshua Rifkin	<i>Assistant Professor of Music</i>
M.F.A., Princeton University	
Marguerite S. Robinson	<i>Associate Professor of Anthropology</i>
Ph.D., Harvard University	
Charles Rockland	<i>Assistant Professor of Mathematics</i>
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Nicholas Rodis	<i>Professor of Physical Education</i>
Ed.M., American International College	
James D. Roff	<i>Assistant Professor of Psychology</i>
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Charles H. Rogovin	<i>Lecturer in Legal Studies</i>
LL.B., Columbia University Law School	
(On the Harold and Harriet Toor Foundation)	

\*\*\* On leave, Spring Term, 1975-76.

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*Gerald Rosenthal	<i>Associate Professor of Economics</i>
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\*\* On leave, Fall Term, 1975-76.

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\*\*\* On leave, Spring Term, 1975-76.

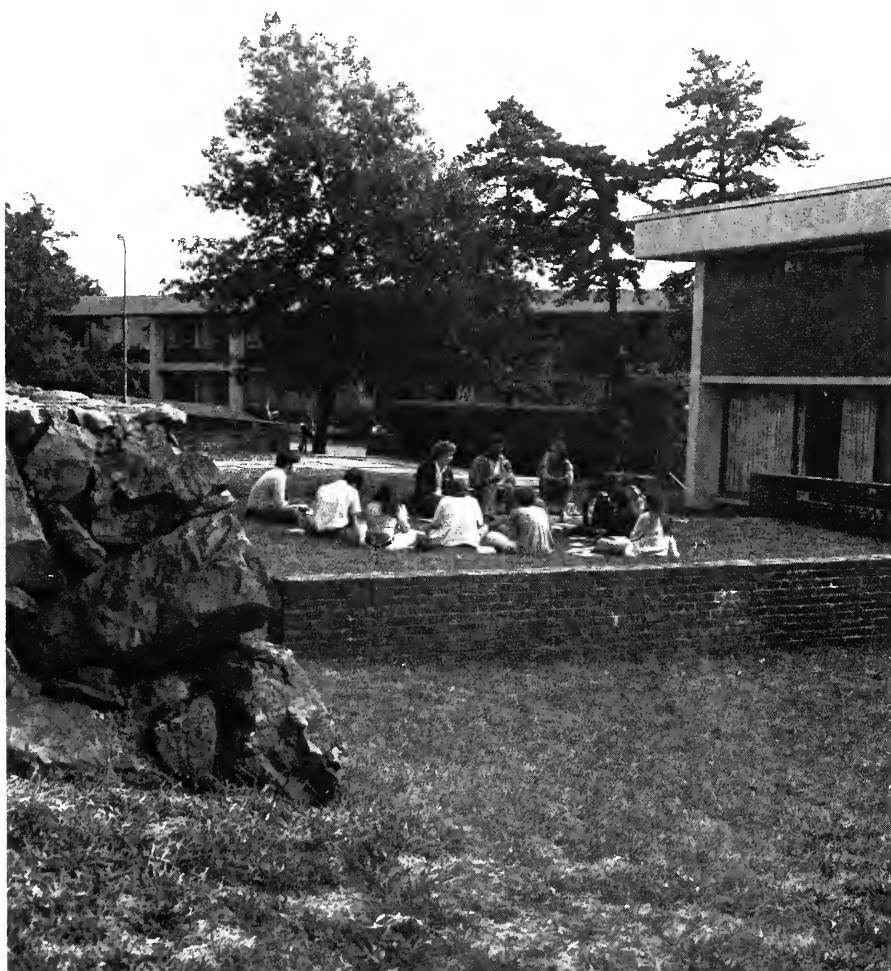
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\*\*\* On leave, Spring Term, 1975-76.

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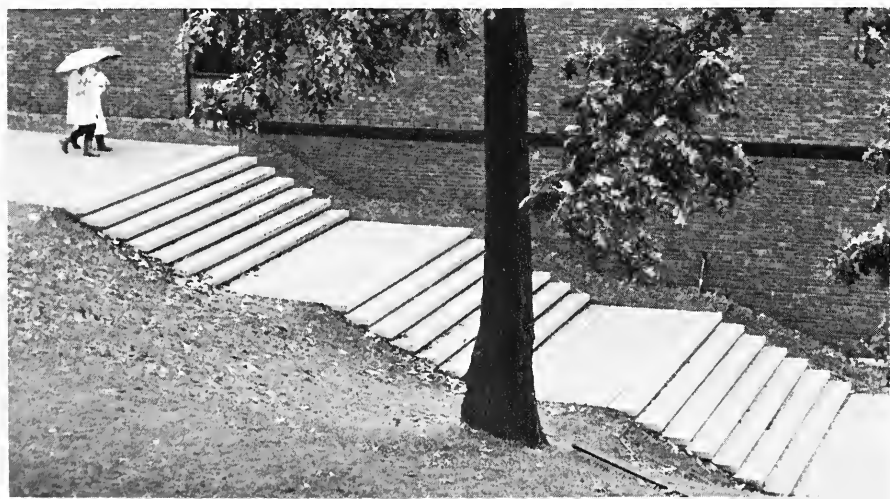
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